

**CROSS-COUNTRY COMPARISON OF
USER PERCEPTION OF DYNAMIC STRATEGIC
PLANNING SYSTEM**

**Master Thesis by
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Date of submission : 8 May 2006

Date of defence examination: 13 June 2006

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June 2006

PREFACE

Sustained competitive advantages require continuous improvement for a company to maintain its strength or weakness in the marketplace. Strategic planning plays crucial roles to be more competitive in the future. The strategic planning tools create significant opportunities to make the strategic planning process more effective. Dynamic Strategic Planning System which closes the gap in the strategic planning tools market has been developed by Siemens Turkey and is used by Siemens Finland, Siemens Belgium and Siemens Poland. This master thesis focuses deeply on strategic planning, user perception, satisfaction and cross-country user comparisons of Dynamic Strategic Planning System.

This master thesis is written during my work as a consultant at Corporate Strategies and Consulting Department of Siemens Turkey. The content of this thesis overlaps with my daily business tasks and I tried to summarize all my findings and experiences during research, development, implementation and operation of Dynamic Strategic Planning System.

I would like to thank Prof. Dr. Burç Ülengin who gave all necessity support to me. I am grateful to my unofficial co-supervisors Dr. Alper Alsan who helped me throughout the stages of my thesis, Eren Ocakverdi who spent weekends to support me on all statistical analysis. I was fortunated to have friends like Özgür Kalan who shares the same fortune with me, Can Mutluer who criticized every line of more than hundred pages and all other team members of Corporate Strategies and Consulting department – Şeyda Güzelışık Taneri, Funda Tınarlı, İlayda Pasiner, Özlem Hoşver, Mine Sinem Arıkan, Muhsin Aşık for their friendship and support.

Last, but not least, I would like to thank my family: my mother Necla Çelebi, my father Ahmet Çelebi, my grandmother Fatmagül Çelebi for their patience, thrust, understanding and moral support.

Alper Çelebi

May 06, 2006 - İstanbul

CONTENTS

	Page No:
ABBREVIATIONS	v
LIST OF TABLES	vii
SUMMARY	xi
ÖZET	xiii
1. INTRODUCTION	1
1.1 Background	1
1.2 Focus	2
1.3 Definitions	2
1.4 Outline of Thesis	2
1.5 Company Details	3
2. DECISION SUPPORT SYSTEMS	4
2.1 Information Systems	4
2.2 Decision Support Systems	6
3. DYNAMIC STRATEGIC PLANNING SYSTEM	10
3.1 Theoretical Foundation of Dynamic Strategic Planning	10
3.2 Conceptual Framework for a Dynamic Strategic Planning System	11
3.2.1 Dynamic Process	12
3.2.2 Strategic Content	15
3.2.3 Tool	16
3.2.4 Web Based Tool by Siemens A.S.	20
3.2.5 Facts about DSPS	21
4. USER PERCEPTION AND SATISFACTION	22
4.1 Standard User Side	26
4.2 Administrator Side	29
5. RESEARCH METHODOLOGY	30
5.1 Method and Sampling	30
5.2 Framework of Questionnaire	31
5.2.1 Tool Related Part of Questionnaire	32
5.2.2 Strategic Content Related Part of Questionnaire	34

5.2.3	Dynamic Process Related Part of Questionnaire	34
5.2.4	General Satisfaction Part of Questionnaire	34
5.2.5	Profile of Respondents	34
6.	FINDINGS	35
6.1	Overview	35
6.2	Profile of Participants	39
6.3	Cross – Country Comparison for Usage of Tool Features	44
6.3.1	General Findings	44
6.3.2	Cross-Country Comparisons	45
6.4	Cross – Country Comparison for Satisfaction Level of Features	47
6.4.1	General Findings	47
6.4.2	Cross-Country Comparisons	47
6.5	Cross – Country Comparison for Satisfaction Level of Attributes	50
6.5.1	General Findings	50
6.5.2	Cross-Country Comparisons	51
6.6	Cross – Country Comparison for General Satisfaction	53
6.6.1	General Findings	54
6.6.2	Cross-Country Comparisons	54
6.7	Comparison of Profiles for General Satisfaction	56
6.7.1	General Findings	56
6.7.2	Comparison of Profiles	56
6.8	Regression Analysis	58
6.8.1	Regression Analysis of General Satisfaction	58
6.8.2	Regression Analysis of Acceptance	60
7.	CONCLUSION	62
7.1	General Remarks on Findings	62
7.2	Future Works	63
8.	REFERENCES	65
9.	APPENDICES	74
	Appendix A: The Survey Questionnaire	74
	Appendix B: Results of Features Usage	77
	Appendix C: Results of Satisfaction Level of Features	91
	Appendix D: Results of Satisfaction Level of Attributes	97
	Appendix E: Results of General Satisfaction	102
	Appendix F: Results of General Satisfaction by Profiles	104
	Appendix G: Results of Regression Analysis of General Satisfaction	106
	Appendix H: Results of Regression Analysis of Acceptance	108

ABBREVIATIONS

IS	: Information System
SIS	: Strategic Information System
DSS	: Decision Support System
DSP	: Dynamic Strategic Planning
DSPS	: Dynamic Strategic Planning System
TR	: Siemens Turkey
PO	: Siemens Poland
FI	: Siemens Finland
BE	: Siemens Belgium
CSC	: Corporate Strategies and Consulting
SM	: Strategy Maker
SP	: Strategic Planners
SPP	: Strategic Planning Partners
EDP	: Electronic Data Processing
IDP	: Integrated Data Processing
MIS	: Management Information Systems
EIS	: Executive Information Systems
ESS	: Executive Support Systems
EMS	: Executive Management Systems
DBMS	: Data base Management Systems
MBMS	: Model Base Management Systems
TAM	: Technology Acceptance Model

IDE : Integrated Development Environments

CRM : Customer Relationship Management

CxO : Chief Executive Officer and Chief Financial Officer

LIST OF TABLES

	Page No:
Table 5-1: Time Plan of Opening and Closing of Survey	30
Table 5-2: Number of All Users in DSPTS and Number of Participants to Survey	31
Table 6-1: Distribution of Respondents to Position Groups	40
Table 6-2: Results of First Transformation of Position	40
Table 6-3: First and Second Transformation Methodology of Position Criteria	41
Table 6-4: Results of Second Transformation of Position	41
Table 6-5: Distribution of Respondents to User Type	41
Table 6-6: Transformation Methodology of User Type	42
Table 6-7: Results of Transformation of User Type	42
Table 6-8: Distribution of Respondents to User Departments	43
Table 6-9: Transformation Methodology of Departments	43
Table 6-10: Results of Transformation of Department	44
Table 6-11: Selected Statistics from SPSS Crosstab for Usage of Features	46
Table 6-12: Selected Statistics from SPSS Results for Satisfaction Level of Features	48
Table 6-13: Summary Table for Homogeneous Groups of Countries in terms of Satisfaction Level for Each Feature	50
Table 6-14: Selected Statistics from SPSS Results for Satisfaction Level of Attributes	52
Table 6-15: Summary Table for Homogeneous Groups of Countries in terms of Satisfaction Level for Each Feature	53
Table 6-16: Selected Statistics from SPSS Results for General Satisfaction Level	54
Table 6-17: Summary Table for Homogeneous Groups of Countries in terms of General Satisfaction Level	55
Table 6-18: Selected Statistics from SPSS Results for General Satisfaction Level	57
Table 6-19: Entered and Removed Variables in Regression Analysis of General Satisfaction	58
Table 6-20: Summary Table of Stepwise Regression Results of General Satisfaction	59

Table 6-21: Entered and Removed Variables in Regression Analysis of Acceptance	60
Table 6-22: Summary Table of Stepwise Regression Results of Acceptance	61
Table 9-1: Overview Results of Number of Respondents for Features	77
Table 9-2: Overview Results of Usage of DSPS Features	77
Table 9-3: Usage of .mht Reporting Feature in Countries	78
Table 9-4: Chi-Square Tests for .mht Usage	78
Table 9-5: Nominal Directional Measures for .mht Usage in Countries	78
Table 9-6: Symmetric Measures for Usage of .mht in Countries	79
Table 9-7: Usage of Printable View Feature in Countries	79
Table 9-8: Chi-Square Tests for Printable View	79
Table 9-9: Nominal Directional Measures for printable view in Countries	80
Table 9-10: Symmetric Measures for Usage of printable view in Countries	80
Table 9-11: Usage of .Executive Summary Feature in Countries	80
Table 9-12: Chi-Square Tests for Executive Summary	81
Table 9-13: Nominal Directional Measures for Executive Summary Usage in Countries	81
Table 9-14: Symmetric Measures for Usage of Executive Summary in Countries	82
Table 9-15: Usage of Excel Uploader Feature in Countries	82
Table 9-16: Chi-Square Tests for Excel Uploader	82
Table 9-17: Nominal Directional Measures for Excel Uploader in Countries	83
Table 9-18: Symmetric Measures for Usage of Excel Uploader in Countries	83
Table 9-19: Usage of Help Documents in Countries	83
Table 9-20: Chi-Square Tests for Help Documents	84
Table 9-21: Nominal Directional Measures for Help Documents in Countries	84
Table 9-22: Symmetric Measures for Usage of Help Documents in Countries	84
Table 9-23: Usage of Consolidation Feature in Countries	85
Table 9-24: Chi-Square Tests for Consolidation	85
Table 9-25: Nominal Directional Measures for Consolidation in Countries	85
Table 9-26: Symmetric Measures for Usage of Consolidation in Countries	86
Table 9-27: Usage of Template Selection Feature in Countries	86
Table 9-28: Chi-Square Tests for Template Selection Feature in Countries	86
Table 9-29: Nominal Directional Measures for Template Selection in Countries	87
Table 9-30: Symmetric Measures for Usage of printable view in Countries	87
Table 9-31: Usage of Comment Feature in Countries	87

Table 9-32: Chi-Square Tests for Comment	88
Table 9-33: Nominal Directional Measures for Comment in Countries	88
Table 9-34: Symmetric Measures for Usage of Comment in Countries	88
Table 9-35: Usage of Printable Sending Comment via E-mail in Countries	89
Table 9-36: Chi-Square Tests for Sending Comment via E-mail	89
Table 9-37: Nominal Directional Measures for Sending Comment via E-mail in Countries	89
Table 9-38: Symmetric Measures for Usage of for Sending Comment via E-mail	90
Table 9-39: Descriptive Statistics for Satisfaction Level of Features for Countries	91
Table 9-40: Test of Homogeneity of Variances for All Features	92
Table 9-41: Results of One-way ANOVA for All Features	93
Table 9-42: Post-Hoc Analysis Results for Satisfaction Level of Tool Features	94
Table 9-43: Post-Hoc Analysis Results for Satisfaction Level of Consolidation at Significance Level of 0.1	96
Table 9-44: Descriptive Statistics for Perception of Attributes for Countries	97
Table 9-45: Test of Homogeneity of Variances for All Features	98
Table 9-46: Results of One-way ANOVA for All Attributes	98
Table 9-47: Post-Hoc Analysis Results for Satisfaction Level of Attributes	99
Table 9-48: Descriptive Statistics for General Satisfaction for Countries	102
Table 9-49: Test of Homogeneity of Variances for General Satisfaction	102
Table 9-50: Results of One-way ANOVA for General Satisfaction	102
Table 9-51: Post-Hoc Analysis Results for General Satisfaction	103
Table 9-52: Group Statistics for User Position	104
Table 9-53: Results of Independent T Test for User Position	104
Table 9-54: Group Statistics for Business Type	104
Table 9-55: Results of Independent T Test for Business Type	104
Table 9-56: Group Statistics for User Types	105
Table 9-57: Results of Independent T Test for Business Type	105
Table 9-58: Descriptive Statistics for Used Criteria in Regression Analysis	106
Table 9-59: Variances Entered and Removed in Regression Analysis	106
Table 9-60: Summary of Regression Analysis	107
Table 9-61: Results of Anova Regression Analysis	107
Table 9-62: Summary of Excluded Variables in Regression Analysis	107
Table 9-63: Result of Collinearity Diagnostics of Regression Analysis	108

Table 9-64: Descriptive Statistics for Used Criteria in Regression Analysis	108
Table 9-65: Variables Entered and Removed in Regression Analysis	109
Table 9-66: Summary of Regression Analysis	109
Table 9-67: Results of Anova Regression Analysis	109
Table 9-68: Summary of Excluded Variables in Regression Analysis	110
Table 9-69: Result of Collinearity Diagnostics of Regression Analysis	110

SUMMARY

Sustained competitive advantages require continuous improvement for a company to maintain its strength or weakness in the marketplace. Strategic planning plays a crucial role for a competitive future. The strategic planning tools create significant opportunities to increase the effectiveness of the strategic planning process. The strategic planning tools help companies to better utilize the bottom-up strategy initiatives. It is also possible to raise the level of understanding of top managers, which is essential in the top-down or bottom-up Dynamic Strategic Planning Process.

Dynamic Strategic Planning System which closes the gap in the strategic planning tools market has been developed by Siemens Turkey and is used by Siemens Finland, Siemens Belgium and Siemens Poland. This master thesis focuses deeply on strategic planning, user perception, satisfaction and cross-country user comparisons of Dynamic Strategic Planning System.

In the case study, four different Siemens companies which are located in different countries were analyzed with regards to user perception for Dynamic Strategic Planning System. A questionnaire was prepared and distributed to 874 users and 140 responses were collected. The usage of tool features, satisfaction level of features, satisfaction level of attributes and general satisfaction levels among countries are compared. Additionally, a regression analysis is done to understand important satisfaction elements.

According to differences and similarities in satisfaction levels, every country is grouped with others which have similar satisfaction level. On the other hand, countries are generally in the same group for different comparison attributes with the same countries because of similar satisfaction pattern. For instance, users in Siemens Turkey and Siemens Poland are generally at the more positive side. On the other hand, users in Siemens Belgium and Siemens Finland are generally on neutral or negative side in the questionnaire. Additionally, the users in Turkey are the most satisfied ones for all features and the users in Siemens Belgium are generally less satisfied with respect to satisfaction elements.

In the regression analysis of general satisfaction, six criteria that affect the general satisfaction level such as acceptance, necessity, effectiveness, user friendliness, response speed of local strategic planning department, Siemens Poland are founded with $R^2 = 0.82$ among 16 criteria. In the regression analysis of acceptance, three criteria that affect the general satisfaction level such as effectiveness, business alignment and performance are founded with $R^2 = 0.73$ among 15 criteria.

ÖZET

Şirketin sürdürülebilir rekabet avantajı için pazardaki güçlü ve zayıf yönlerini sürekli iyileştirmesi gerektirir. Stratejik planlama gelecekte daha rekabetçi olmakta hayati rol oynamaktadır. Stratejik planlama araçları da stratejik planlama sürecinin etkinliğini arttırmak için önemli imkanlar yaratmaktadır.

Stratejik planlama araçları aşağıdan yukarıya strateji hareketinden daha fazla yararlanmaya yardımcı olmaktadır. Aynı zamanda aşağıdan yukarıya veya yukarıdan aşağıya dinamik stratejik planlama süreci için gerekli olan yüksek düzeydeki yöneticilerin anlama seviyesini yükseltmek mümkündür.

Pazardaki strateji planlama aracı açığını kapatan Dinamik Stratejik Planlama Sistemi Siemens Türkiye tarafından geliştirilmiş olup Siemens Finlandiya, Siemens Belçika ve Siemens Polonya'da kullanılmaktadır. Bu yüksek lisans tezinde stratejik planlama, kullanıcı algılaması, kullanıcı memnuniyeti ve Dinamik Stratejik Planlama Sistemi için ülkelerin karşılaştırılmasına derinlemesine odaklanılmıştır.

Örnek olay incelemesinde farklı ülkelerdeki dört farklı Siemens şirketi kullanıcı algılamasıyla ilgili olarak analiz edilmiştir. Bir anket hazırlanarak 874 kullanıcıdan 140 cevap toplanmıştır.

Ülkelerin aracın özelliklerinin kullanımı, aracın özelliklerinden memnuniyet seviyesi, genel memnuniyet seviyeleri karşılaştırılmıştır. Bunun dışında memnuniyet elemanlarının anlaşılması için regresyon analizi yapılmıştır.

Memnuniyet seviyelerindeki benzerlikler ve farklılıklara göre her ülke kendisiyle benzer memnuniyet seviyesinde olan ülkelerle gruplanmıştır. Diğer taraftan ülkelerin benzer memnuniyet şablonundan dolayı ülkeler genellikle aynı ülkelerle gruplanmıştır. Mesela Siemens Türkiye'deki ve Siemens Polonya'daki kullanıcılar genellikle daha pozitif taraftadır. Diğer taraftan Siemens Belçika ve Siemens Finlandiya'daki kullanıcılar genellikle ya tarafsız ya da negatif taraftadır. Bunu dışında Siemens Türkiye'deki kullanıcılar tüm araç özellikleri açısından en memnun ve Siemens Belçika'daki kullanıcılar ise en az memnun olanlardır.

Genel memnuniyet regresyon analizinde 16 kriter arasından toplam memnuniyet seviyesini etkileyen ve $R^2 = 0.82$ ile açıklayan altı kriter (kabul etme, gereklilik,

etkinlik, kullanım kolaylığı, yerel stratejik planlama bölümünün cevap verme hızı ve kukla deęişkenlerden Siemens Polonya) bulundu. Kabullenme regresyon analizinde 16 kriter arasından toplam memnuniyet seviyesini etkileyen ve $R^2 = 0.73$ ile açıklayan üç kriter (etkinlik, işle uyum ve performans) bulundu.

1. INTRODUCTION

1.1 Background

It is widely agreed that the rate of change in many industries is faster than ever before. The technology that has been created is being used to reshape the very world that created it. The technology is both the result and the cause of the information age which affects every aspect of business life. The knowledge base available to businesses is expanding at a staggering rate and the challenge is to handle it in an efficient and effective manner. Hence information systems (IS) affect most aspects of business, education and personal lives (McNurlin and Sprague, 1989). The systems may aid, impress, or even frustrate, but they affect everyone as they function in business engrossed in acquiring information.

Comedian Groucho Marx observed, “It isn’t so much that hard times are coming; the change observed is mostly soft times going” (Bradley et al., 1975). This sentence describes the world of IS today. The future may not bring hard times, but the future will not be the soft times of the past. The world is becoming much more complex due to technological changes (McNurlin and Sprague, 1989). In this rapidly changing environment, information is critical to decision-making and planning of companies.

Strategic decisions are, in addition to strategy maker plans, made on a day-to-day basis. In order for the decisions made by individuals to be strategically coherent it is necessary that these individuals develop a shared understanding of some of the basic assumptions and concepts affecting their business environment. Dynamic strategic planning tools provide a discussion and decision environment for strategy planners and strategy makers. Various online and client based tools have been developed by companies to make strategic planning process more efficient.

Siemens A.S., the Turkey branch of Siemens AG, has developed an intranet based strategic planning tool (Dynamic Strategic Planning System – DSPPS) for internal usage in 2002 and the number of Siemens companies such as Siemens Turkey, Siemens Finland, Siemens Poland and Siemens Belgium that use this tool is increased year by year. The core development team organizes user satisfaction

surveys on a yearly basis in order to define the scope of the improvement for next year.

1.2 Focus

This master thesis focuses on comparisons of perception levels for DSPPS between users from different Siemens countries, where DSPPS is used in the strategic planning process. The comparisons are analyzed according to satisfaction survey results. Cultural, social and economic comparisons between countries and the impacts of environmental factors on perception are out of scope of this master thesis. Additionally the analyses of survey results which are related to satisfaction levels of dynamic strategic planning contents and processes are out of the scope of this study.

1.3 Definitions

The following definitions were used for the purposes of this work:

- an information system is a computerized set of organized procedures that, when executed, provide information to support processes, decision making and control in the organization (Lucas, 1990).
- a strategic information system is an information system to support or change enterprise's strategy (Wiseman C., 1985).
- a decision support system is an information system that aids the process of decision making (Finlay, 1994).
- a user is someone that uses the information system.
- a system administrator is someone that manages the process and the tool in the company.
- Siemens regional companies are legal entities and branches of Siemens AG.

1.4 Outline of Thesis

A detail literature review is done with using on-line databases, books, university libraries and internet sources. It is mainly focused on decision support systems, dynamic strategic planning system, user perception and satisfaction topics. The

chapters are organized from expanded topic like decision support system to narrowed topic like user perception and satisfaction. In the first four chapters, it is focused on literature reviews and case study and findings after fifth chapter. The relations between literature reviews and case study are emphasized in the thesis.

1.5 Company Details

Siemens AG is a very well known German international company which operates in many business areas (from automation to telecommunications) with a global workforce of 470,000 people in over 190 countries. Siemens A.S. started operating in Turkey since 1800s with the first telephone cables. After those times, the business portfolio of Siemens A.S. had evolved and now it is a big electrics/electronics company with over 2.300 employees. Siemens A.S. is made up of various business divisions operating in different business areas: each division has its own management and business characteristics, but they are all connected and coordinated under the umbrella of Siemens A.S. Turkey. The groups are: Communications (Com), Automation and Control (A&C), Power (P), Transportation Systems (TS), Medical Solutions (Med), Building Technologies (SBT), Program and System Engineering (PSE).

2. DECISION SUPPORT SYSTEMS

2.1 Information Systems

The deregulation of formerly governmental controlled markets and the economic integration of national markets led to increased competition. Individual market participants need to assess the market to learn advantageous behavior. Managers benefit from basic market information and market behavior to estimate the influence of their decisions on the development of the market. Consumers on the other hand can use their market knowledge behavior to optimize their buying decisions. Governments set rules, make laws and raise taxes in order to steer the behavior of the market in a desired way. Even minor changes in regulations might have a major impact on the market's behavior. Therefore, tools for market simulation help to understand the development of the market, help to assess the impact of individual actions, and consequently help to improve market participants' decisions (Czernohous et al., 2003).

Information system is a technologically implemented medium for recording, storing, and distributing linguistic expressions, as well as for drawing conclusions from such expressions (Hirschheim et al., 1995). According to Lucas (1990) an information system is a computerized set of organized procedures that, when executed, provides information to support processes, decision making and control in the organization.

Using the portfolio model first developed by McFarlan (1984) and extended by Ward (1987) it is possible to categorize information systems into four different types:

- High potential systems which are largely experimental and have only possible future benefits.
- Strategic systems which are important for future success and which are the basis for current competition.
- Key operational systems which provide efficiency and which are critical to current success.

- Support systems which are not critical to current operations but which are valuable for other reasons, such as providing local benefits to an office or work group.

Especially information systems containing an "intelligent" or "knowledge" component are prevailing and include knowledge-based systems, decision support systems, intelligent agents, and knowledge management systems. These systems are in principle capable of explaining their reasoning or justifying their behavior. There appears to be a lack of understanding, however, of the benefits that can flow from explanation use, and how an explanation function should be constructed (Gregor and Benbasat, 1999).

Steven (1976) indicates that while there are several ways to categorize information systems, the most applicable one is the comparison of the systems with respect to the usage behavior of users:

- Retrieve isolated data items
- Use as a mechanism for ad hoc analysis of data files
- Obtain pre-specified aggregations of data in the form of standard reports.
- Estimate the consequences of proposed decisions
- Propose decisions
- Make decisions

The importance of information technology for strategic decisions steadily increases in today's highly competitive business world. Furthermore the need for effective strategic information systems (SIS) has become more and more critical. A strategic information system has been defined by Wiseman as, "The information system to support or change enterprise's strategy" (Wiseman C., 1985). SIS can contribute substantially to an organization. It can bring IS users and IS professionals together and establish a mutual understanding of the value of information systems and the problems associated with them (Hackney and McBride, 2002). Furthermore SIS can assist the organization to prioritize information systems development by ranking such systems in terms of their efficiency, effectiveness, and strategic value. In that manner, it helps the organization to identify its portfolio of planned computer-based applications, which both align well with corporate strategy and can create an advantage over competitors (Doherty et al., 1999).

The interaction between the information systems development project and the business organization is a continuous challenge for the software community (Avison and Fitzgerald, 2003). This is not only a question of communication and language; on a deeper level, it concerns the sequencing and interaction of change processes in the organization (Bygstad, 2005).

2.2 Decision Support Systems

Finlay (1994) and others define a decision support system (DSS) broadly as "a computer-based system that aids the process of decision making." Furthermore Turban (1995) defines it as "an interactive, flexible, and adaptable computer-based information system, especially developed for supporting the solution of a non-structured management problem for improved decision making. It utilizes data, provides an easy-to-use interface, and allows for the decision maker's own insights."

For Keen and Scott Morton (1978), DSS couple the intellectual resources of individuals with the capabilities of the computer to improve the quality of decisions. For Sprague and Carlson (1982), DSS are "interactive computer-based systems that help decision makers utilize data and models to solve unstructured problems." On the other hand, Keen (1980) claims that it is impossible to give a precise definition including all the different aspects of the DSS. Nevertheless, according to Power (1997), the term decision support system remains a useful and complete term for many types of information systems that support decision making.

Sprague and Watson (1979) and Bigoli (1998) showed a historical progression of systems. Electronic Data Processing (EDP), which simply automated or accelerated transactions and evolved to include Integrated Data Processing (IDP, added simple decision models); IDP advanced to include Management Information Systems (MIS, an information system with a more comprehensive reach into different business functions and managerial layers and greater use of decision models). MIS evolved to include DSS, which features the most complete package of integrated databases, decision models, and decision support systems.

DSS must be distinguished from several other buzzwords identified by Bidgoli (1998): "the definitions of Executive Information Systems (EIS), Executive Support Systems (ESS), Executive Management Systems (EMS) and their place among EDP, MIS, and DSS are still evolving, it is considered that these systems to be a branch of DSS".

According to Bidgoli (1998), DSS should include six core requirements:

- DSS require hardware
- DSS require software
- DSS require human elements (designers, programmers and users)
- DSS are designed to support decision-making
- DSS should help decision makers at all organizational levels
- DSS emphasize semi-structured and unstructured tasks.

Decision-making processes in strategic planning are usually very complex and are frequently broken down into sub-problems. Very often, this hierarchical decomposition involves several levels of decisions. Solutions are proposed for each sub-problem, either by experts who work individually or by a group of experts who analyze the problem collectively. One of the main problems is to find a way to automate the process as much as possible, particularly in a way so that automatically coherence and coordination among decisions made locally by different actors at different levels is achieved (Pinson et. al., 1997). The problem is compounded by the ill-structured nature of the decision-making process (Mintzberg, H. et al, 1976). There is no algorithmic solution. If a solution exists, it is often obtained in stages; the objective of the problem-solving system is not to find an optimal solution but rather to be able to formulate the alternatives among which there may exist satisfactory solution called a satisfying solution” (March, J. and Simon H.A., 1958).

DSS is not only a growing field; it is also a dynamically changing and complex body of interrelated disciplines (Chowdhury and Chan, 2005). The two types of DSS as described in the current literature are (Laudon and Laudon, 2003):

- i. Model-driven DSSs: Systems, which are primarily stand-alone and use a model to perform "what-if" and other kinds of analyses.
- ii. Data-driven DSSs: Systems, which allow users to extract and analyze useful information from large databases by using statistical or other analytical tools to find hidden patterns and relationships in large databases to infer rules. This way of analyzing data is also known today as data mining or knowledge discovery in databases or data warehouses.

The DSSs may have the following main components:

- i. DSS database: collection of current or historical data (DBMS: data base management system)
- ii. DSS software system: collection of software tools/mathematical and analytical models (MBMS: model base management system)
- iii. User interface: easy interaction.

According to Arnott (2004), DSSs are computer-based information systems that are designed with the purpose of improving the process and outcome of decision-making. The primary purpose of decision support systems is to help the decision maker to develop an understanding of the ill-structured, complex environment represented by the model (Steiger, 1998).

DSSs are used by individuals in order to improve their managerial effectiveness. Few types of systems are familiar, where innovative systems are conceived by internal and external “entrepreneurs”, who mostly concentrate on technical characteristics, where they fail to anticipate the usage of such systems to increase the effectiveness of individuals in organizations (Steven, 1976).

Today rapid progress is being made in information diffusion from heterogeneous resources such as databases, text, and semi-structured information bases (Wiederhold and Genesereth, 1997). Basic database systems are growing into broader information systems to encompass the communication and data analysis capabilities that are now available. For advanced systems the objective justifying the investment in those systems is to support decision-making (Wiederhold, 2000).

Technology has made great progress in accessing information related to past events, which are stored in databases, object-bases, or the World-Wide Web. Data warehouses that integrate data into historic views are becoming widely available (Kimball, 1996).

Steven (1976) explained the requirements for successful DSSs:

- Use a prototype, avoid expensive dangers
- Sell the system, compare it with others
- Give users responsibilities

- Consider the needs of the user and let them actively participate in implementing
- Prepare training programs
- Show users beneficial parts, don't impose the system as a whole

Although various SIS research has been conducted over the past few years, it was noticed that the same types of problems were reported, thus suggesting that SIS has not significantly improved in practice (Baker, 1995). A significant gap exists between the plans and expectations of the developers of an IS strategy and the actual outcome of the strategy. Often, only a few of the systems mentioned in the strategy are implemented and some of them take substantially longer than anticipated (Hackney and McBride, 2002). A survey of four Norwegian organizations showed that only 42% of the projects in the formal IT strategy had been implemented after five years (Gottschalk, 1995). This lack of implementation not only leaves firms dissatisfied with their current SIS, but also creates problems establishing and maintaining priorities in future SIS (Gottschalk, 1999).

For an organization, the failure to execute SIS effectively can cause the loss of a competitive advantage (Tan et al., 1995). Hence it is no surprise that both corporate general managers and IS executives have realized that an improved SIS is very important for their business (Niederman et al., 1991; Champy, 1993).

3. DYNAMIC STRATEGIC PLANNING SYSTEM

3.1 Theoretical Foundation of Dynamic Strategic Planning

The word strategy originated from the Greek word “strategos”, which means “the plan to destroy the enemy by using the enemies’ own resources and means effectively” (Bulu, 2001). According to the dictionary of Turkish Language Institution (TDK) strategy is defined as “A path followed to reach a goal” (TDK, 2004). Strategy is defined as a firm’s long-term target decision maker and an adaptation of ways to move and use resources to reach those targets (Chandler, 1962). According to another definition strategy means “a motif in the movement chain that occurs by time” and also considers if the firm is in a meaningful motif or not (Mintzberg, 1994). Strategy is the ability to gain a talent or to adapt according to a change of situations but rather to lead those changes of situations (Ünalı, 2002). According to Integrated Management Model strategic planning and innovation management should be done at strategic management level and in order to reach these goals a budget and business plan must be developed on an operational management level (Bleicher, 1996).

Strategic management in order to reach its organizational goals it has to develop efficient strategies, and the planning applying and supervision of those strategies is needed (KOSGEB, 2003). Strategic planning aims to combine the output of all the management tools together which makes it the most important part of strategic management. Strategic planning is a pre-condition for any business’ success (Özkan and Yüksel, 2002). Strategic planning claims to be the most significant element for the growing uncertainty in corporate all around the world (Beinhocker and Kaplan, 2000; Rigby, 2003). Globalization, demographic change, innovation, growing complexity of services and competitiveness of the future increases contribute to this uncertainty and therefore it is necessary for strategic planning to possess a dynamic structure.

Strategic planning is the model of an association’s mission on future performance targets and strategies (Thompson and Strickland, 1996). Suggested main steps are the selection of targets, preparation of models, writing of a plan and evaluation of the

planning (KOBINET, 2004). Planning is a part of management's work. A strategic planning has to be flexible and open to new changes. Strategic planning, according to management information systems, is a part of the infrastructure of the top management support systems (Laudon and Laudon, 1996).

Dynamic strategic planning (DSP), is a new approach in strategic planning and shows how the firms should reach its goals and is a planning technique that changes the business models as variables' change by time (Alsan, 2004).

Alsan (2004) indicated that DSP is based on following five properties:

- *Process*: DSP, is not an approach of one or two meetings, it a growing planning process.
- *Flexibility*: As the ways to reach the target may change due to internal and external factors, for continuity the strategic targets are adaptable for change.
- *Manageable*: It is based on certain steps like roles and responsibilities, ways of reporting and communication process.
- *Sharing*: The sharing of strategic planning increases motivation within the corporation and shows individuals their targets.
- *Integrated*: The planning contains two main topics the analysis and the planning. The detailed, repetitive, business processes are the sub topics.

It is advised that DSP targets cover a time period of three to seven years. This period can vary according to the needs of different corporations. One or two operational plans and budgets should be based on the strategic targets. These strategic targets should be reviewed according to the changes. DSP's target of focusing on three to seven years gives those results in a much shorter time. Short-term planning, targets and the things used to be done are designed in the basic state of DSP which makes the results come true in a shorter time (Alsan, 2004).

3.2 Conceptual Framework for a Dynamic Strategic Planning System

Successful systems balance the emphasis on strategic content, dynamic process, and tool to fit the work at hand. Strategic content, dynamic process, and tools (or managing technology) are key factors for a successful system.

It is necessary to balance them depends upon strategic planning environment. This is where the forces of cost, quality, schedule, market conditions, and many others come into play.

The philosophy of Dynamic Strategic Planning System (DSPS) is explained by the dynamic process, strategic content and tool in DSP. Few DSP systems have a perfect balance of strategic content, dynamic process, and tool. Usually, one or more will be emphasized over the others, often with appropriate reasoning. However, when the emphasis is too great on one of the three, the success of DSPS is seriously jeopardized.

3.2.1 Dynamic Process

Different companies adopt different ways to make strategies and there is no “one right way” to create them. A strategy can be viewed as a pattern for the decisions that a company makes (Mintzberg and Waters, 1985). These decisions can be carefully designed (planned strategy) or they can simply emerge without prior planning (emergent strategy). This implies that there can also be a “no strategy” strategy where there is no clear coherent pattern in the behavior of the firm. The planned strategy can also be thought of as a top-down process and the emergent strategy as bottom-up strategy making (Day, 1990). The aim here is to strengthen the bottom-up strategic initiatives coming from those closest to the customer, competition, and technology (Bartlett and Ghoshal, 2002).

The strategic planning processes are often conducted around a set of meetings, which often include the chief executive officer of the company and the senior corporate team (Kaplan and Beinhocker, 2003). This approach eases the top- down strategy process formal or strategy making process, in which company actions are well planned before their implementation. Some authors argue that strategic decisions are often made outside the formal strategic planning process (Mintzberg and Waters, 1985; Quinn and Voyer, 1996; Kaplan and Beinhocker, 2003). As companies start operating in new geographical areas the management team responsible for creating strategies should ideally consists of people with different educational and cultural backgrounds. These international teams are also crucial to the success of international strategies (Davison, 1995). Strategic planning should not be solely the work of top corporate management since many authors have stated the need for a bottom-up strategy process in order to complement the top- down process (Day, 1990; Nonaka and Takeuchi, 1995; Quinn and Voyer, 1996). Both approaches, top-down process and bottom-up process, are necessary in order to create adaptive and

effective strategies. Environmental turbulence has led to the decentralization of strategic decision-making (Grant, 2003). That is why strategic planning should also be a learning process (Ghoshal and Bartlett, 1998) where managers share ideas and challenge their opinions to learn from each other and create "shared understandings of complex business issues" (Senge, 1990). That's way managers are better prepared to make good strategic decisions whenever they are required to do so (Kaplan and Beinhocker, 2003).

Strategic planning is by nature a complex task, since it deals with issues of the future. Tasks of a complex and important nature are often handled by a group (Grant, 1996b), or a team, of individuals. Opportunities and threats in the external environment appear unexpectedly and in unknown proportions. These events must be handled in real-time. This calls for continuous collaboration among the individuals participating in strategic planning and implementation. When these opportunities or threats appear, it is important that managers are ready to take appropriate actions (Kaplan and Beinhocker, 2003). Since the environment is constantly changing strategies should be designed to be adaptive. Strategy process should be a continuous process rather than an annual meeting where a company's top management discusses future directions (Vanharanta, 1995). To solve the problems mentioned above DSPP is proposed including dynamic process, strategic content and tool. DSPP is designed to speed up the strategy process. With the help of DSPP it is easier to utilize the information and intuition of employees everywhere in the organization.

DSPP is recommended for companies having multi business units. At the first stage the aim is to create a system according to the company's needs. At the main structure the planning model is advised from top to bottom and the business units contribution must be viewed in a group aspect. Companies that are not organized into business units can be organized by departments.

As the highlight of the strategic planning process does every group present its strategic planning to the top management and the critical cases are discussed, according to the critical cases of the strategic meetings the targets for development are pointed out. After the targets have been reached the top management confirms the strategic plan. The process above can be repeated in the time period that is defined, or the plans can be changed according to the change in the market, and the previous plans can be saved as different versions.

Static strategic planning is traditionally a top-down process. It is tightly controlled and supported by strategy planners that provide information on markets, competition, customers, and economic forecasts. Company-wide strategic planning processes

often include major plans covering an interval of three to five years and annual updates. Often these updates are tied to, and sometimes tied down by, the budget process. Static strategic planning often fits well with traditional organization charts that are multidivisional or functional. In the chain of command decision-making and communication follow a vertical flow up and down.

DSP processes require a horizontal approach to decision making and communications. They are more likely to be successful in organizations that utilize teams and networks. With the support of top management the strategy planners create the vision and grand strategies that provide a context for all other strategic decision making. The strategy planning team then determines whom to involve in the process and the procedures for communication and implementation. They must also plan for the training of those who are now being asked to think strategically. Once strategy maker trainees reach the necessary level of understanding, they must be given incentives to act. Finally, a strategic tool that supports the flow of knowledge and shows evidence that organizational units are achieving their strategic goals must be put in place. In a knowledge creating company, a knowledge spiral occurs when tacit knowledge is spoken out by knowledge workers, then recombined in new ways, and internalized by other workers. In DSPs processes, this spiral of knowledge is primarily used for innovation purposes which are tied to the firm's strategic vision and goals. Hence DSPs are becoming more important day by day.

According to Pinson, S.D. et al. (1997), we can come across four players in the DSP process:

- *Strategic Planners*: For a business to be able to express them in a clear way, the strategical approach is spread to top management and strategy makers. DSP processes synchronization.
- *Strategic Planning Partners*: One of the most important factors for the success of DSP process is the effort put in by the strategic planning partners. SPPs give business unit specific business support which brings more quality to the strategic planning. The number of SPPs is decided according to the number of groups.
- *Strategy Makers*: They are the people that give decisions to fill in the strategic plans. They are divided into business units.

- *Top Management:* They are the decision makers of the strategic planning made by the SMs and that are also supported by the SPs and SPPs. They are the directing power of a firm.

3.2.2 Strategic Content

While the DSP content is created by strategy makers they have to focus on a dynamic vision and add a value to the planning by questioning the detail information in the DSP. The advised DSP includes two main topics analysis and planning:

3.2.2.1 Analysis Topics

The analysis topics cover the business, the activity in the market, the similar behaving customer groups and the competitive environment areas. The analysis topics are explained below:

- *Business Analysis:* The analysis is based on the strategic business units where the products and services are offered and sold to the defined current market and on a created technological planning map and parts which the company defines its character.
- *Market Analysis:* The fields of Strategic business units are based on the effects that are upon the market size, the technological, social, economical, political and environmental topics. The total list of the products and services, the new applicable markets size can be counted in this part. Every strategy makers in order to gain understanding for the future of the industries and the “expected” future for objective goals of an organization, they use the SPEET Analysis (Social, Political, Economical, Environmental and Technological) in a form to get an overall benefit by taking social, political, economical, environmental and technological factors into consideration.
- *Customer Analysis:* Customer groups and the customer groups that sales have taken place, the size of the total market share, the evaluation of the customer groups’ attractiveness and competitiveness are defined.
- *Competitive Analysis:* The market share calculated according to the active competitors; strategic decisions; strong/weak sides are gathered in 5 main topics and evaluated in 30 different criteria.

3.2.2.2 Planning Topics

Recommended planning topics include following items:

- *Structural Planning*: Includes subjects of regions where sales are high, customers (private/public), sales channels (direct, distributor, internet etc.) and business types (project, system, product, services) distribution.
- *Financial Planning*: Includes topics related to basic financial data such as strategic business units' order entries by years, sales, and costs.
- *Detail Planning*: Includes topics covering the strategic business point of views to e-business, service business development and the production capacity usage.
- *Strategic Decisions*: Topics of vision and objectives are defined within this category. Set targets are reached according to the "Balanced Scorecard" (Kaplan, 1996).
- *Main Projects*: Involves the targets set by the strategic groups for efficient usage of the limited resources and the reports of past performances.

3.2.3 Tool

Globalization has opened up new markets. Many companies operate in various different geographical and cultural areas. The group of employees concerned with strategic issues (Mintzberg, 1996) might be widely spread into different locations in a multinational company. This limits the number of face-to-face meetings the strategic group can have considering reasonable amount of time and money spent during a year. Advancements in technology have brought forth a great amount of choices of applications and tools which support the strategic planning as well as other organizational processes. The focus area makes the investigation of the latest technology used to assist the strategic planning implementation process necessary.

Sustained competitive advantages require continuous improvement for a company to maintain its strong or weak position on the market. Although new products / services are on their way, strengthening one's internal position can also be effective if it results in the introduction of new and/or more sophisticated tools that allow a firm to make faster and better decisions. In order to facilitate raises in productivity, organizations need to ensure that the development of information systems is in line long-term needs of the organization (Rau and Rao, 1993). Considering increasing

competition, shrinking market shares and diminishing profit margins, the trend moves towards increasing the value for money and reducing costs. Over time, organizational expenditures are coming under the increasing detailed examination of management. In such a situation, justification of IT expenses, given its expanding roles, will be of great significance. Consequently, the notion of effective utilization of information systems becomes a critical issue.

Tools are developed in order to deliver various forms of information to strategy planners, strategy makers, strategic planning partners and top management during the strategic planning process. Tools, techniques and processes used differ from each other and great significant lies in finding the right balance of dynamic process, strategic content, and tool. The Strategic planning tool companies claim that the tools they sell are vital for the companies' growth. New techniques and tools are continuously developed and these new developments are helpful throughout the strategic planning process. Consultants promote their methods in order to convince the management that they know how to help the organization to experience sustainable growth. IT tool developers continually learn new techniques and apply new tools in order to help the players involved in the strategic planning process to do more, in less time, with higher quality.

The essential argument in favor of strategy makers using systematic strategic planning tools is not only that these tools will shed light on subjects of concern to future oriented strategy makers, but that these DSP tools also act as catalysts to generate, enroll, leverage, and even create for organizations resources that otherwise would not have been available to them. The complementary benefits of using these tools are to be able to predict the future more accurately to prepare for the future in a more effective way and most importantly to improve an organization's ability to achieve its desired future, (i.e. impact the future). For the strategy makers who are seeking to understand the near- and medium-term future more clearly, several of these tools will guide a futurist's scope and method of inquiry to yield information which may not be discovered through many of the tools currently used by futurists.

In order to solve the problems mentioned in the dynamic process and strategic content topics DSPS is proposed to combine dynamic process, strategic content and tool. DSPS is designed to speed up the strategy process. With the help of DSPS it is easier to utilize the information and intuition of employees throughout everywhere the organization.

In static strategic planning, information is funneled through the strategy planner that does data manipulation, strategic analysis, and financial analysis. Strategic

information can be made readily available in DSP processes to anyone in need of this kind of information. Systems support real time decision making in new and exciting ways. Companies can now directly link their systems to those of their customers and suppliers in order to reach faster response times and improved inventory control. Linking systems also to strategic goals can lead to an increase of the company's value.

Strategic planning tools often provide the quantitative data needed in strategic planning. Qualitative data e.g. the intuition and knowledge of frontline employees and middle management is, at least explicitly, often not used in the strategic planning process. Effective and successful strategies however require the participation of middle management and also the frontline employees. This is why a bottom-up strategy making is needed to complement the top- down strategic planning. In geographically dispersed companies it is difficult to achieve a coherent bottom- up process. DSPS has provided new ways for the communication of strategic plans to strategy players and decision makers located in different regions. These ways include individually assigned read or write access to different sections of the tool, sharing comment possibilities within the tool and basic document management features.

Especially in order to handle the uncertainty of the future of the companies having multi business units; and the environmental change, DSP and a DSPS is needed to support the process. DSPS has to satisfy those needs and enable the dynamic process. In order to bring success and stable growth to companies having multi business units the responsibilities and the roles of the players and the process map are defined. DSPS with its easy usage of the content of a web-based, high value added support system, and which is based on the analysis and planning topics, should be used in DSP.

A tool is a device that will assist the user to fulfill a task in an more efficient and effective way and by having a valuable set of tools it is easier for the user to select the ones which are more convenient to use and apply. However, tools are not the only means which will help the user in DSPS. Additionally, users do not have to use all features of the tool in a strategic planning process except in some situations. Sometimes using a technique is much more difficult than adopting a simpler technique.

The predictability of global changes and the business environment decreases due to leaps and discontinuous trends (Kettunen, 1991). Long-term plans are not very effective in this kind of a business setting (Ghoshal and Bartlett, 1998). Because of these changes there is an increase in the variety of the business environment and

therefore the variety, which is stipulated by the law of requisite variety, must try to survive in this environment (Ashby, 1956). It means that an organization should expand the range of its possible behaviors, which is also one definition for learning (Huber, 1991). According to Nonaka and Takeuchi (1995) employees can try to reach requisite variety by "combining information differently flexibly and quickly and by providing equal access to information throughout the organization". In a rapidly changing business environment it is necessary to quickly collect, analyze, and use information (Mockler, 1993). This is why DSPS is needed for strategic planning. DSPS can enable the strategists to gather relevant structured and unstructured information and knowledge quickly and easily.

A web-based system can also facilitate the externalization, internalization, and combination of knowledge (Nonaka and Takeuchi, 1995). With the help of this system the gathering of knowledge is fast and easy. Socialization means transferring an individual's tacit knowledge to another person's tacit knowledge, which is difficult without face-to-face interaction (Nonaka and Takeuchi, 1995) and is therefore not considered here.

Everyone can bring his/her own expertise and knowledge to the discussion. All this is done in real-time and ideally with several participants discussing simultaneously, i.e. collaborating over the Internet or Intranet. The dynamic strategic planning tool also works as "organizational memory" (Huber, 1991) where discussions and opinions are being recorded for later reference.

The aim here is not to try to teach everything to everyone but to provide a place where knowledge is integrated. As Grant (1996a) notes, specialization must bring some benefits, otherwise the existence of multiple individuals in an organizations would be unnecessary. The goal is that everyone brings in their own expertise for the use of the group and this knowledge is integrated in the environment to form the strategy.

DSPs are supported by tools which monitor and measure the progress made toward strategic goals on a real time basis. Websites are created to show this progress, to gather strategic intelligence, and to allow for constant communication and feedback among the top management, strategy makers, and strategy planners.

Strategic planning often deals with complex and unstructured questions. The answers are often textual and can not be easily presented in a compact form. In addition strategy planner have additional tasks related to operational issues, which limits the time available for strategic thinking and for analyzing strategically relevant

information. Strategic Planning tools possible have the ability to present only the key messages or central ideas belonging to a certain topic. It is to get an overall picture of the topic quickly. More detailed information is naturally lost in the process but in many cases this doesn't create significant problems.

Changing an IT tool from one that is data based to one that is decision based can be difficult. To break down the powerful fiefdoms of IT managers, a new breed of IT professionals is needed who can design systems for knowledge workers. They in turn then can become knowledge brokers, teaching other knowledge workers and partners how to use their specialized knowledge to better support their clients. DSPPS and balanced scorecards that link processes, information, and strategic goals are one example of such knowledge transfer.

The tools are perhaps the most interesting of the three keys (dynamic process, strategic content, and tool) to DSPPS' success. Adopting tools requires a commitment of time to learn and use them. Sometimes we use tools ineffectively by trying to do too much, or not looking at whether the benefits outweigh the costs. Furthermore, there are times when we just use the wrong tool. All players in the strategic planning process should ensure that strategic planning tool support is present.

3.2.4 Web Based Tool by Siemens A.S.

Siemens A.S., which is the subject of the case study, developed a tool for dynamic strategic planning process which is called DSPPS. It was developed in 2001 and new versions that comprise content as well as IT infrastructure improvements are realized every year. First international success story in Siemens Finland, Siemens Belgium is realized in 2003 and Siemens Poland followed them in 2004.

On the technical side, Siemens A.S. developed a Microsoft Excel based tool in 2001. The tool did not achieve an international success and was only used internally. In order to achieve an international break through it was decided to invest in a web-based strategic planning tool. The first version of DSPPS was developed on DB4Web, which is one of Siemens' technologies for the development of industrial solutions.

DSPPS provides the beneficial strategic planning environment to strategic planners, strategy makers and top managers. DSPPS overlaps with the requirements for process, content and tool.

3.2.5 Facts about DSPS

Siemens A.S. provides the technical and conceptual consultancy to other Siemens countries and hosts the entire technical infrastructure. Siemens A.S. is responsible for the entire supply chain including research, development, marketing, sales, implementation and after sales services to users.

Siemens AG – Germany has approved that Siemens A.S. is the center of competence for regional strategic planning process among all Siemens countries and that DSPS is the most advanced tool for the regional strategic planning process.

Siemens A.S. coordinates all related parties regarding all steps from research and services such as software development companies, technical infrastructure providers, universities, e-learning centers, performance testing companies.

The department of Corporate Strategies and Consulting (CSC) is the owner of DSPS and responsible for decisions about the future development of the tool. CSC defines the improvement scope regarding conceptual and technical development. PSE is the technology partner of CSC and they define the technologic roadmap, architecture of database and software.

DSPS is used at Siemens Turkey (TR) since 2002, Siemens Finland (FI) since 2003, Siemens Lithuania, Latvia, Estonia, Belgium (BE) and Luxemburg since 2004, Siemens Poland since 2005 and Siemens France since 2006 by more than 1.000 users. Siemens Lithuania, Siemens Latvia and Siemens Estonia are operated under umbrella of Siemens Finland as Siemens Luxemburg is operated under Siemens Belgium.

Feedbacks, improvement ideas and comments are collected during the strategic planning process and the regular satisfaction survey is organized towards the end of that year's process. The scope for the improvement package of the successive version of DSPS is defined according to ideas collected through the methods mentioned above.

4. USER PERCEPTION AND SATISFACTION

User satisfaction has been defined as a learnt disposition toward the objects of an IS (Lucas, 1973), a set of beliefs about the relative value of an IS (Swanson, 1974), “the sum of one’s positive and negative reactions to a set of factors” (Bailey and Pearson, 1983) and Ives et al. (1983) identify staff and services, product information, vendor support, and knowledge and involvement as factors that underlie user satisfaction. They considered user satisfaction as the extent to which users believe the information system available to them meets their information requirements (Ives et al., 1983).

This definition suggests that users perceive the system irrespective of its technical quality, and relates to the fulfillment of user needs by an IS. Kim (1989) describes user satisfaction in terms of information quality, system effectiveness and user attitudes. Doll and Torkzadeh (1989) developed a 12-item tool in order to measure user satisfaction and they grouped those items under five components such as content of system, system accuracy of system, format of reports, ease of use of system and the timeliness of systems. Other definitions include terms like “felt need”, “system acceptance”, “perceived usefulness”, “MIS appreciation”, “feelings about a system” and “system friendliness” (Melone, 1990).

Davis (1989) developed the Technology Acceptance Model (TAM) which models how users come to accept and use a technology. The model suggests that when users are presented with a new software package, a number of factors influence their decision about how and when they will use it. Two important factors can be described as:

- Perceived usefulness: the degree to which a person believes that using a particular system would enhance his or her job performance
- Perceived ease-of-use: the degree to which a person believes that using a particular system would be free from effort.

It is suggested that a designer should be able to improve perceived usefulness by adding appropriate functional capabilities to a system. The importance of this suggestion can be derived from Davis’s TAM model (1989), in which it is said perceived usefulness affects attitude and behavior both directly and indirectly. When

the outcomes of using a particular system are perceived by the user in a way that they appear valuable to the user, he/she will be more likely to accept the system. Davis (1989) points out that perceived usefulness shows a stronger and more consistent relationship with usage behavior and intentions than other variables reported in the literature, including attitude of satisfaction in using.

A designer should be able to make a system user friendly by making it easier for users to invoke functions. This can be achieved if the procedure to do so is intuitive. Gauging intuitiveness would require identification of those subconscious patterns of user behavior which would be highly stimulated by cultural and sub cultural context. Ease of use may be defined based on experience as well as on culture. An example would be that for people in the Arabic world the right-to-left flow of information seems natural. However, many Arabic users are very familiar with American software, which they use on a daily basis, so that they might find a different, culturally adapted design hard to adjust to, even if it were more intuitive. However, this study attempts to demonstrate that in general users work better with intuitive interfaces designed specifically with regards to their cultural background (Evers, 1997).

The importance of culturally appropriate interface design for Web-based e-business and applications is emphasized by many researchers (Markus, 2002; Becker, 2002; Smith et al., 2004). Specifically, it is noted that the “culturability” (Barber and Badre, 1998), a combination of culture and usability in Web design, has a direct impacts on the user’s perception of trustworthiness and credibility of websites (Marcus and Gould, 2000; Fogg, 2002).

Usability is the measure of the quality of a user’s experience while interacting with a product or system. It includes factors such as ease of learning, efficiency of use, memorability, error frequency and severity, and subjective satisfaction. Thus, an important factor for consideration is the application of cultural design principles in the design process of e-learning materials (US Department of Health and Human Services, 2004).

Evers and Day (1996) emphasize the vital role of culture in user interface acceptance. They claim that there are significant cultural differences between user acceptances of interfaces for different cultural groups. For example, in their study they found distinct differences between Chinese and Indonesian users.

The Technology Acceptance Model (TAM) shows the influences of usefulness and ease of use on a technology’s degree of acceptance. Although Davis (1989) does not

acknowledge the possibility those users from different cultures may prefer different interface design features. That culture can be expected to play a significant role in users' satisfaction of system can also be found in the cross-cultural technology acceptance studies. Allwood and Wang (1990) state that the cultural environment people live in is assumed to strongly affect the way they conceptualize reality. The cross-cultural research shows significant differences between cultures with respect to technology acceptance. It is therefore reasonable to test whether interface design features will have different impacts in each culture (Evers and Day, 1996).

Satisfaction represents the degree to which a user's perceived personal needs and the need to perform specific tasks satisfactorily are met by a system (Goodhue and Straub, 1991). Existing work such as descriptions of Reasoned Action Theory (Fishbein and Ajzen, 1975) and TAM suggests that satisfaction leads to usage more than usage leads to satisfaction.

The IS discipline's primary concern is the successful implementation of IT in organizations. IS are an essential component of the solution to many of the problems faced by organizations which are trying to successfully face current challenges. An IS may thus be considered successful if it meets criteria such as fulfilling user needs and organizational objectives / goals (Bokhari, 2005).

Delone and McLean (2002) suggest that nature, quality, and appropriateness of usage of the system are also important factors in addition to the measurement of the time spent using the system. They consider system usage as the necessary condition under which IS can affect organizational performance. David (1989) found that perceived usefulness is significantly correlated with system usage and that perceived usefulness increases user satisfaction (Mahmood and Swanber, 2001). Such research emphasizes the importance of system usage and user satisfaction in evaluating a system in terms of its success.

Miller (1989) argues that an effective information system is one that is able to achieve the purposes of its users. Garrity and Sanders (1998) define IS performance in terms of its delivery on time and to budget, and to the extent to which users are satisfied with it.

Literature about user satisfaction lists system and information design attributes (e.g., information accuracy and system reliability) which can be used potentially as a useful diagnostic for the design of the system; however, it is pointed out that user satisfaction is a weak predictor of system usage (Davis et al. 1989, Hartwick and Barki, 1994).

User satisfaction analysis is plagued by many problems, such as the lack of consensus on a conceptual definition of user satisfaction construct and the lack of agreement on how user satisfaction should be measured (Woodroof and Kasper, 1998).

Whyte et al. (1997) states that a user has perceptions of information system success and this perception occurs as follows:

- user makes judgments by means of attribute
- attribute is quantified by measure
- measure relates to information system success.

Weil and Rosen (1995), did an extensive study of computer anxiety over twenty-three countries. Their main finding was that in some countries the majority of subjects were technophobic while in other countries the majority of studied subjects were technophilic. They found that the attitudes of studied individuals towards computers differ from country to country, which according to the research is caused by the cultural differences including the form of educational system, the political environment, and the economic organization.

Allwood and Wang (1990) and Omar (1992) also found significant differences between cultures in attitudes towards computers. Igarria and Zviran (1996) found clear cultural differences in terms of adaptation and usage characteristics. These studies establish that cultural differences have indeed an impact on the attitudes towards and the acceptance of technology.

Bailey and Pearson (1983) developed a 39-item questionnaire for measuring perceived user satisfaction with IS. Ives et al. (1983) built on this work: they improved the reliability and reduced the size of the instrument to 33 items. They also produced a short-form of the only 13 items and a 4-item general scale for measuring user satisfaction. Factor analysis identified three characteristics as being closely related to successful ISs as perceived by users:

- the quality of the information product being supplied
- the quality of systems personnel and services
- the business knowledge and involvement of systems personnel in the business.

Wixom's and Todd's (2005) model specifies key antecedents to information and system quality that is derived from a decomposition and integration of some factors. System quality is shaped by reliability, flexibility, integration, accessibility, timeliness. It is important to note that each of these factors reflects perceptions of the system itself and the way it delivers information. Information quality is shaped by completeness, accuracy, format, currency. These dimensions determine the user's perception of the quality of the information included in the system. They assert that information and system quality beliefs shape attitudes about information and system satisfaction, respectively. This is supported by the concept from the attitude behavior literature that beliefs about objects (system and information quality) are linked to attitude toward an object (system and information satisfaction) (Ajzen and Fishbein, 1980).

Study of Whyte G. et al (1997) examines the idea that there are service attributes of information systems which will, when understood and managed effectively, enable information systems departments and their product to be perceived by the users as successful. They found 21 items that explain the relationship between the constructs and user perception of IS success to be analyzed. The defined items by Whyte G. et al. (1997) are selected as a basis for the preparation of the satisfaction survey among DSPS countries in the case study. Nine of the items that match the structure of DSPS and strategic planning process such as acceptance, necessity, accessibility, performance, business alignment, accuracy, effectiveness, user friendliness, reporting are selected as one of the satisfaction measures.

In principle, DSPS have two main groups of users such as standard user and system administrators. The expectations, requirements and satisfaction criteria of these user groups are different and should be considered separately.

4.1 Standard User Side

Whyte (1997) indicates that five levels of seniority on the user side were defined, including director, senior manager, middle manager, supervisor and operational staff. The survey results were analyzed for differences in correlation with success across these different levels.

- Directors place particular importance on reliability, understanding, upkeep, user involvement and necessity.

- Senior managers are also concerned with reliability, and additionally with business alignment.
- Middle managers are concerned with flexibility, documentation, responsiveness, direction and specification. We can observe the concerns becoming more pragmatic as we come down the seniority levels.
- Supervisors have a strong perception of competence of information system staff, the need for user involvement, and the need for system to be marketed well. Understanding and accuracy are also important.
- At the operational level staffs have their own special concerns for example specification, business alignment, training and necessity. We learn that operational staffs do have strong feelings about the qualities of the systems that they use. This is a strong message which not is the expected one, and which information system people need to be aware of at all stages.

Watson and Carte (2000) emphasize that executives should always have systems to provide needed information. These include printed reports, meetings, newspapers, clipping services, and many other sources. These sources, though, often lack accuracy, relevance, completeness, timeliness, and consistency (Watson and Carte, 2000). As a result, executives are faced with many complex sets of data among which it is often difficult to determine a comprehensive view. In addition to the difficulty determining the scope of the data executive decision makers are faced with complex sets of multidimensional data and the evaluation of tabular displays can be tedious and time-consuming. Furthermore, relationships among variables may be hard to determine. Graphic displays have frequently been suggested as a way of overcoming the traditional limitations of tabular displays. However, most graphical methods available to executives are able to portray only two- or three-dimensional data. As the number of variables increases, so does the potential for overload (Brown and Brown, 1992/1993).

The system owner should provide learning session on how to use DSPS and the strategy planners should include the time needed for training into the strategic planning process. Although learning the DSPS is vital, it is ignored by users most of the time. On the user side it is assumed that using DSPS can be learned when it is needed. However, they have to get instructions either in a classroom environment, from a mentor, out of books, from interactive help or through online training sessions. Documentation is necessary, but it can not replace the actual training of the

users. From system developer side, it was also noticed that it is usually sufficient to train only some of the users who can then assist and internally train other users. During the usage of strategic planning process all users were enabled to report problems to the development team, using email. If an organization has a separate strategic planning department or strategic planning partners in operating groups, it is needed to ensure that its members are trained and qualified to handle user inquiries.

Understanding, direction and integration of the process are extremely important since they correlate strongly with the system's success, and it is easy to rationalize this on the basis of the novelty, the need for strategic alignment and the problems of integrating new and old ways of working. Friendliness and reporting are also emphasized (Ward, 1987).

Players involved in the strategic planning process can learn to use a tool with some degree of proficiency by themselves but in most of the cases it is worth to invest money to get the users some help in order to assist them in their learning efforts. The system administrators simply need to observe the users in the processes to realize the difference in the productivity between power users of the tools and those who have only a basic knowledge.

While using a system, users are likely to respond in different ways to actions and outputs of the system. When a system is slow or not responding users may get angry or impatient, and when a system recovers a file after a user made a mistake the user probably feels relieved or extremely happy. Interface design features probably induce various responses: an icon can make users feel familiar with the interface but can also lead to feeling confused, distracted or annoyed (Evers, 1997).

Developing a user interface is an art of its own. There are many guidelines and standards to follow, some of them contradictory for the development of multiple platforms. The user interface should be very simple and easy to understand. For example on the left side, there can be a content area to give the user easy access to different content sections and tool specific features can be at the top. The developers should be sure that the context of any operation is clear from the menu command. When in doubt, it is necessary to add modifying words. Many applications allow the user to set font size, color schemes, and other visible characteristics of an application.

4.2 Administrator Side

There are two major roles defined on the administration side:

- Administration of concept: This kind of administration involves decisions about content coverage and feature improvements of the strategic planning tool.
- Administration of technical infrastructure: This kind of administration deals with the actual programming code and decides about improvements of the strategic planning tool infrastructure.

All administrators should work together in order to create a synergy effect.

The players of the strategic planning process should understand the complex systems with the help of strategic planning tools. A text editor and a compiler are used by some programmers. Integrated Development Environments (IDEs) help them while constructing the components for their application programs. Tools are used most of the time for automating a significant portion of the repetitive work and testers focus on developing effective tests.

Complexity arises from a poorly established interface between the customer and the software developer. Discounting that, the following technical characteristics should be considered from the administrator point of view: real-time attributes, multiprocessing requirement (concurrency), nature of the algorithm, requirement for recursion, nature of input, determinacy of input, nature of output, language characteristics, knowledge/experience of staff on application. General performance can be monitored by following key indicators: raw processing of data measured by CPU time and possibly interrupt servicing efficiency for real time application, numerical accuracy and for large systems, CPU time for engineering/scientific applications, I/O efficiency for commercial applications, user "wait time" for interactive applications, CPU time and memory requirement for microprocessor applications.

Integration with back office systems (e.g. ERP tools, CRM tools etc.) is one of the important requirements for a successful system. Developers work on new versions of tools even before the current tool is developed completely. It is considered that the first version consists of flexible and simple structures and features which can be built on. By working according to this method, it is needed to synchronize a code when the earlier version is finally complete.

5. RESEARCH METHODOLOGY

5.1 Method and Sampling

The user feedbacks and opinions are collected via surveys. The survey is developed using online survey software called Survey Monkey- www.surveymonkey.com. Survey Monkey allows users to create professional online surveys. The three components of the web-based service are: survey design and customization using a survey editor; response collection; results analysis (via charts/graphs or raw ASCII data). Useful examples are given for novice survey creators. The basic subscription is for free with a limit of 10 questions and 100 responses per survey. The 'professional' subscription allows up to 1000 responses per month.

DSPS was implemented in Siemens Turkey, Siemens Belgium, Siemens Finland and Siemens Poland as of June, 2005 and the survey was distributed among the users of all countries that use DSPS. Distributing a survey in countries which have social and economic similarities to Turkey such as Greece, Spain etc. can generate more valuable results but DSPS has not been implemented in these countries, yet. It is recommended to add these countries to future researches.

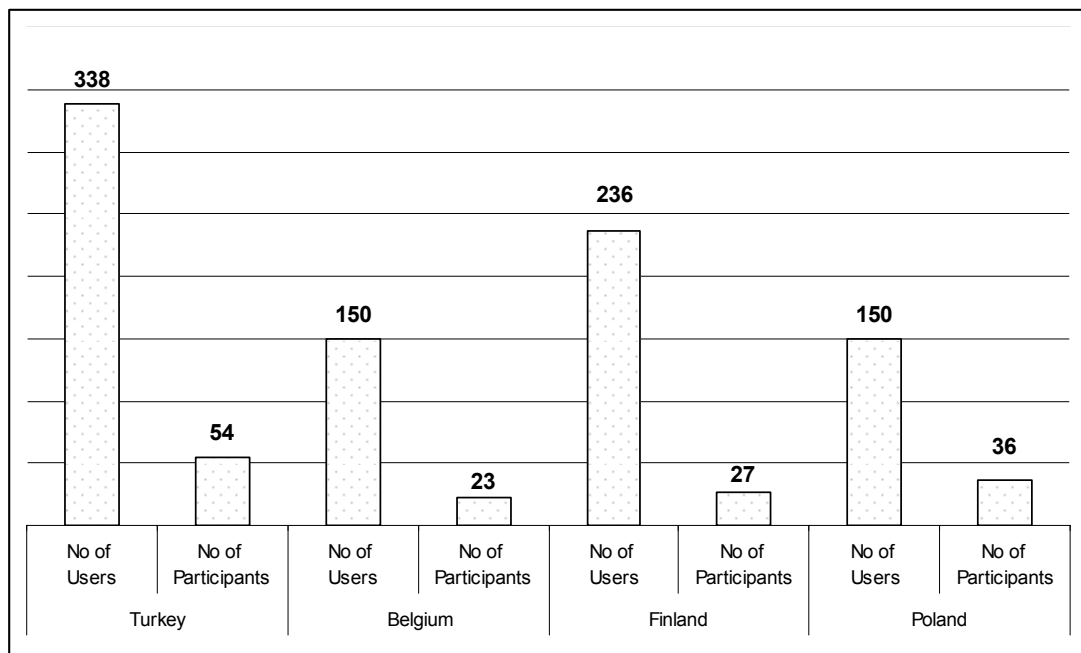
DSPS has 874 defined users in four different systems – Turkey, Belgium, Finland and Poland. All users in these systems were chosen as the study's respondents. The survey has been sent to all defined users in all systems via e-mail that contains an explanation and link to the survey. Table 5-1 explains the process of collecting response from users:

Table 5-1: Time Plan of Opening and Closing of Survey

ID	Task Name	Duration	Start	Finish	06 Jun '05							13 Jun '05													
					S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S					
1	Opening Survey	1 day	Mon 06.06.05	Mon 06.06.05																					
2	First E-Mail to Users	1 day	Mon 06.06.05	Mon 06.06.05																					
3	First Deadline to fill-in the survey	6 days	Mon 06.06.05	Mon 13.06.05																					
4	Reminder to Users	1 day	Tue 14.06.05	Tue 14.06.05																					
5	Final Deadline to fill-in the survey	3 days	Tue 14.06.05	Thu 16.06.05																					
6	Closing Survey	1 day	Fri 17.06.05	Fri 17.06.05																					

The survey was opened to users on June 06, 2005 and the response submission deadline was June 13, 2005. One reminder was sent to all users since the return rate was only around 5% and the deadline was extended to June 16, 2005. On the closing date, the return rate had increased to 16% and a total number of 140 responses were collected. Table 5-2 shows the details of participation. Separate on-line questionnaires are organized for each country to understand user perceptions, separately.

Table 5-2: Number of All Users in DSPS and Number of Participants to Survey



It can be seen that Siemens Poland has the highest survey return rate (24%) among all countries. The return rate for Siemens Turkey is 16%, for Siemens Belgium is 15% and for Siemens Finland is %11. Overall return rate equals to 16%.

If the respondents are compared, there are 54 respondents from Siemens Turkey and this is equivalent to 38,6% of all respondents. The smallest participation is at Siemens Belgium.

5.2 Framework of Questionnaire

The structure of the distributed questionnaire (Appendix A) is defined according to results of the theoretical foundation. There are five sections in the questionnaire and these sections focus on the satisfaction level of the tool which is used during the strategic planning process, the satisfaction level of the content which is filled by the

strategy makers during the strategic planning process, the satisfaction level of process elements and the general satisfaction level and profile of respondents. The three dimensions (dynamic process, strategic content and tool) of the Dynamic Strategic Planning System that is explained in the theoretical foundation part are implemented in questionnaire structure.

5.2.1 Tool Related Part of Questionnaire

There are three types of questions in this part including usage of tool features, satisfaction level of tool features and satisfaction level of attributes which measures general satisfaction.

Usage of tool features is asked in the first question and a nominal scale (yes / no) is used to measure usage of tool features. The features that are enabled in DSPS are listed below:

- **.mht Reporting:** .mht is one of the reporting features of DSPS and if users or system administrators want to print some information in DSPS, the recommended method is to use .mht.
- **Printable View:** Printable view is another reporting feature of DSPS and if users or system administrators want to print one section out of DSPS, printable view provides the print friendly view.
- **Executive Summary:** The executive summary feature provides all critical performance indicators that are available in different section on one single page. It is observed that some of the DSPS countries based all their strategic talks on the content of the executive summary.
- **Excel Uploader in Financial Dev. Section:** DSPS users are used to MS office components like MS Word, MS Excel etc. so that integration with MS Office components make the strategic planning process easier. This is the reason why DSPS provides the users with a feature to upload the financial figures to financial development section by using MS Excel and MS Access.
- **Help Documents:** Help documents are available to further explain the content and usage of DSPS to users and system administrators.
- **Consolidation:** There exist large number of groups and business units in these companies. One of the important things is to see the whole picture of

the company so that the consolidation features allow the users to consolidate figures and assessments that are entered at lower levels.

- **Template Selection Regarding Consolidation:** The consolidation can be done for all business units that are defined under one group. On the other hand, system administrators and users want to see consolidation of different business units that are defined under different groups. Consolidations with templates provide the users and system administrators with consolidated data of business units that report to different groups.
- **Comment:** It is expected that users enter figures and assessments in structured format into DSPS. In order to provide the user with the possibility to further explain entered data and resulting graphs, DSPS offers the comment feature under which users can add their comments to each section in the tool.
- **Sending Comment via e-mail:** DSPS provides the user with the possibility to send the comment to other users via e-mail.

The second question in the questionnaire is related to about the user's satisfaction level of features which are listed above. The user can give an answer to this question if they used the related feature and give "yes" as an answer to the previous question. The satisfaction level is asked about used features of DSPS giving a range of five ordered categories such as very dissatisfied, dissatisfied, neutral, satisfied and very satisfied.

The third question in this part is related to satisfaction measures. These attribute items are defined according to results of the theoretical foundation regarding user perception and strategic planning perspectives. Whyte G. et al (1997) found 21 items that explain the relationship between the constructs and user perception of IS success to be analyzed. The defined items by Whyte G. et al (1997) are selected as a basis for preparation of the satisfaction survey among DSPS countries in the case study. Nine items that match the structure of DSPS and strategic planning process such as acceptance, necessity, accessibility, performance, business alignment, accuracy, effectiveness, friendliness and reporting are selected as satisfaction measures of the tool. The satisfaction level is asked within a range of five ordered categories such as poor, fair, average, good and excellent.

5.2.2 Strategic Content Related Part of Questionnaire

As explained in previous chapters, there are analysis and planning topics in DSPS. In this part of the questionnaire, the most important and the least important topics from the users' point of view are asked to survey takers. The analysis of this part is not in the scope of this study.

5.2.3 Dynamic Process Related Part of Questionnaire

There are some elements that affect the overall user satisfaction level. These are satisfaction level for the process coordinators' support, deadlines of process and trainings related to tool and process. The satisfaction level is asked within a range of 5 ordered categories such as very satisfied, satisfied, neutral, dissatisfied and very dissatisfied.

5.2.4 General Satisfaction Part of Questionnaire

Overall satisfaction considering process, content and tool is asked to users within a range of 5 ordered categories such as very satisfied, satisfied, neutral, dissatisfied and very dissatisfied. On the other hand, one more question is added to the questionnaire which asks if the user will advise DSPS to others with "yes / no" as nominal scale answer.

5.2.5 Profile of Respondents

In the last part, the user is asked question about their profile elements. The profile is summarized in four questions including the user's position in Siemens (CxO, consultant, technical head, commercial head, strategic planning, controlling, sales and marketing and corporate departments), user type in DSPS (normal user, strategic planning partner and system admin), department (Com, SBS, A&D, I&S, SBT, L&A, PG, PTD, Med, TS, SV, Osram, corporate Departments) and e-mail address.

6. FINDINGS

6.1 Overview

As mentioned above the questionnaire consists of five sections. The second part of the findings chapter, focuses on the profile of the participants who are grouped based on their position in the companies, on their roles in the strategic planning process and on their department in the company. The responses are gathered to fewer groups because there are insufficient responses for analysis.

In the third part, the usage level of features (all features in DSPS) in the countries is analyzed according to respondents' answers (yes/no) and cross-country analysis is done to detect differences.

In the fourth part, the satisfaction level of features (only used features by users) is analyzed according to respondents' answers (very dissatisfied / dissatisfied / neutral / satisfied / very satisfied) and cross-country analysis are done to see differences.

In the fifth part, the satisfaction level of attributes (defined nine attributes in literature review) is analyzed according to respondents' answers (very dissatisfied / dissatisfied / neutral / satisfied / very satisfied) and cross-country analysis are done to see differences.

In the sixth part, the general satisfaction level is analyzed according to respondents' answers (very dissatisfied / dissatisfied / neutral / satisfied / very satisfied) and cross-country analysis are done to see differences.

In the last part, the regression analysis is done between the elements of satisfaction and the overall satisfaction considering the dynamic process, strategic content and tool. The relations between satisfaction elements are investigated and the correlated elements are eliminated during regression analysis.

The analyses used in the findings part are listed and explained below:

Chi-Square: Tests the hypothesis that two categorical variables are independent, without indicating strength or direction of the relationship.

- General Varieties:
 1. Pearson Chi-Square
 2. Likelihood-Ratio Chi-Square
- More varieties for 2 X 2 tables (which is not appropriate for our analysis):
 1. Fisher's exact test
 2. Yates' corrected chi-square

Pearson's Chi-Square: Statistic used to test the hypothesis that the row and column variables are independent.

- This analysis should not be used if any cell has an expected value less than 1, or if more than 20% of the cells have expected values less than 5.
- In general, the significance value is more important than the actual value of the statistic.
- Can be used with tables larger than 2 X 2.

Likelihood Ratio Chi-Square: A goodness of fit statistic similar to Pearson's chi-square.

- For large sample sizes, the two statistics are approximately the same.
- Used as a test statistic for log linear models.
- In general, the significance value is more important than the actual value of the statistic.
- Can use with tables larger than 2 X 2.

Linear-by-linear association: A measure of linear association between the row and column variables.

- Also known as the Mantel-Haenszel chi-square test.

- In general, the significance value is more important than the actual value of the statistic.
- Although this is output by SPSS under nominal cross tabulation measures of association, this statistic should not be used for nominal data. Only appropriate for quantitative variables.

Lambda: A measure of association that reflects the proportional reduction in error when values of the independent variable are used to predict values of the dependent variable.

- A value of 1 means that the independent variable perfectly predicts the dependent variable.
- A value of 0 means that the independent variable is no help in predicting the dependent variable.
- Symmetric: The form calculated by summing the numerators and denominators of the two forms where each variable in turn is classified as dependent and calculating the ratio.
- Can be used with tables larger than 2 X 2.

Goodman and Kruskal Tau: A measure of association which reflects the proportional reduction in error when values of the independent variable are used to predict values of the dependent variable.

- Values range from 0 to 1. Unlike lambda, where the modal category is used for predictions, tau uses the marginal proportions.
- Can be used with tables larger than 2 X 2.

Uncertainty Coefficient: A measure of association that indicates the proportional reduction in error when values of one variable are used to predict values of the other variable.

- For example, a value of 0.83 indicates that knowledge of one variable reduces error in predicting values of the other variable by 83%.
- Symmetric: The form calculated by summing the numerators and denominators of the two forms where each variable in turn is classified as dependent and calculating the ratio.

- Can be used with tables larger than 2 X 2.

Phi and Cramer's V: Phi is a chi-square based measure of association that involves dividing the chi-square statistic by the sample size and taking the square root of the result. Cramer's V is a measure of association based on chi-square.

- For a 2 X 2 table, Phi and Cramer's V are equal to the Pearson product-moment correlation.
- Phi may exceed a value of 1.0.
- Phi is appropriate for 2 X 2 tables so that, the result of this statistic is not used.
- Cramer's V is always less than or equal to 1.0.
- Can be used with tables larger than 2 X 2.

Contingency Coefficient: A measure of association based on chi-square.

- The value ranges between zero and 1, with zero indicating no association between the row and column variables and values close to 1 indicating a high degree of association between the variables. Usually does not reach the upper limit of 1.0.
- The maximum value possible depends on the number of rows and columns in a table.
- Can be used with tables larger than 2 X 2.

One – Way ANOVA: This analysis of variance procedure produces an analysis for a quantitative dependent variable affected by a single factor (independent variable). Analysis of variance is used to test the hypothesis that several means are equal. This technique is an extension of the two-sample t-test. It can be thought of as a generalization of the pooled t-test. The following assumptions needed to be achieved for a valid ANOVA analysis:

- Observations needed to be randomly sampled and independent
- Dependent variables must have normal distribution
- Dependent variables must have equal variations

We will test only equal variation and other pre-tests are assumed appropriate for ANOVA.

Levene: Levene tests the hypothesis that the variances of each group are equal. If the Levene test is positive ($P < 0.05$) then the variances in the different groups are different (the groups are not homogeneous).

Tukey's HSD: The differences between countries analyzed with using Post-Hoc analysis such as Tukey HSD since we are testing all pairwise comparisons post-hoc and this procedure allows us to perform tests of these comparisons with maintaining the experiment wise significance level at 0.05 (Maxwell, S. and Harold D., 1990). Tukey HSD creates subsets of the categories; if there is no difference between two categories, they are put into the same subset. The groups are arranged in ascending order of their mean number of years in education. Tukey's HSD is especially used for groups that have equal variances.

Tamhane's T2: Using a series of post-hoc tests (Tamhane, Dunnett T3, Dunnett C, and Games Howell), permitting the comparison of the three groups while allowing for unequal group variances. Tamhane analysis is selected to see country comparisons in this study.

6.2 Profile of Participants

In the survey, the position of respondents in the company is asked in order to understand their satisfaction and perception level, separately. The names of departments were defined according to organization chart of companies. 137 respondents (97,9% of all respondents) answered this question.

In general there are eight classifications of positions in these companies active in the strategic planning process. The table 6-1 shows the distribution of respondents under the position groups.

Table 6-1: Distribution of Respondents to Position Groups

Position / Country Number of Respondents	Turkey	Belgium	Finland	Poland	Total
Commercial Head	6	6	5	4	21
Consultant	5	1		1	7
Controlling	4	4	6	3	17
Corp. Department	1	1		2	4
CxO			1	1	2
Others	4	3	3	3	13
Sales and Marketing	22	4	8	12	46
Strategic Planning	2	4	1	6	13
Technical Head	9		2	3	14
Total	53	23	26	35	137

In the table, there is an insufficient number of respondents for some groups like CxO (CEO, CFO, CIO), Corp. Department etc. to generate a valuable analysis, so that, gathering of positions into groups is necessary.

The first transformation is done according to the respondents' roles in strategic planning process. As explained in previous chapters, there are four major roles such as strategic planning partners, strategy planners, strategy makers and top management and these four groups can be categorized under two main groups so-called strategy makers and strategy planners in the case of an insufficient number of respondents. This is because top management is one of the key strategy makers and strategic planning partners are one of the key strategy planners. The results of the first transformation are shown in table 6-2.

Table 6-2: Results of First Transformation of Position

Results of First Transformation - Number of Respondents	Turkey	Belgium	Finland	Poland	Total
Strategy Planner	12	10	7	12	41
Strategy Maker	37	10	16	20	83
Others	4	3	3	3	13
Total	53	23	26	35	137

It is seen that the number of the "others" group is not enough to analyze results so that, one more transformation is needed. There is an area to specify explanation of "others" and these explanations generally refer to positions that fit to the definition of strategy planners. Hence it is assumed that others belong to strategy planners. Table 6-3 explains the first and second transformation methodology.

Table 6-3: First and Second Transformation Methodology of Position Criteria

Before Transformation	After Transformation 1	After Transformation 2
CxO	Strategy Maker	Strategy Maker
Consultant	Strategy Planner	Strategy Planner
Technical Head	Strategy Maker	Strategy Maker
Commercial Head	Strategy Maker	Strategy Maker
Strategic Planning	Strategy Planner	Strategy Planner
Controlling	Strategy Planner	Strategy Planner
Sales and Marketing	Strategy Maker	Strategy Maker
Corporate Departments	Strategy Planner	Strategy Planner
Others	Others	Strategy Planner

Table 6-4 shows the distribution of positions after the second transformation. According to described transformation methodology, the percent of strategy planners and strategy makers equals to 39,4% and 60,5%, respectively. It is expected to get more accurate results after transformation.

Table 6-4: Results of Second Transformation of Position

Results of Second Transformation - Number of Respondents	Turkey	Belgium	Finland	Poland	Total
Strategy Planner	16	13	10	15	54
Strategy Maker	37	10	16	20	83
Total	53	23	26	35	137

Another question regarding profile of respondents is related to user types in DSPPS. There are three user types such as normal user, strategic planning partners (SPP) and system administrators (system admin) in DSPPS. Every user has different access rights that are restricted through DSPPS administrators and some of the features within DSPPS are only available for system administrators. Table 6-5 shows the distribution of respondents grouped by user type.

Table 6-5: Distribution of Respondents to User Type

User Type / Country Number of Respondents	Turkey	Belgium	Finland	Poland	Total
Normal User	39	18	23	29	109
SPP	8	3	2	3	16
System Admin	6	2	1	3	12
Total	53	23	26	35	137

It can be seen that the number of system administrators and SPP is not sufficient to make accurate analysis. Hence transformation among user types is needed. Rights and available features for SPPs and system admins are very similar in DSPPS and those user types have similar roles in the strategic planning process. After these

assessments, SPPs and system admins are grouped under a new group which is called admins. Table 6-6 shows the transformation map.

Table 6-6: Transformation Methodology of User Type

Before Transformation	After Transformation
Normal User	Normal User
SPP	Admins
System Admin	Admins

After transformation, the percent of normal user and admins equals to 79,6% and 20,4%, respectively. It is expected that more accurate results are achieved after transformation. Following table shows the distribution of user types in countries after transformation.

Table 6-7: Results of Transformation of User Type

Results of First Transformation - Number of Respondents	Turkey	Belgium	Finland	Poland	Total
Normal User	39	18	23	29	109
Admins	14	5	3	6	28
Total	53	23	26	35	137

Another question regarding the profiles of respondents is related to the department of respondents in DSPS. There are twelve possible departments present in DSPS countries. Table 6-8 shows the distribution of user according to departments.

Table 6-8: Distribution of Respondents to User Departments

Department / Country Number of Respondents	Turkey	Belgium	Finland	Poland	Total
A&D	5	2	4	4	15
Com	10	6	6	10	32
Corp. Department	9	7	2	3	21
I&S	3	4	4	1	12
L&A	1			1	2
Med	7	1	1	5	14
PG	6	1	1	3	11
PTD	5		2	1	8
SBS		1	3	1	5
SBT	5	1	1	3	10
SV				2	2
TS	2		2	1	5
Total	53	23	26	35	137

There are an insufficient number of respondents in order to analyze the departments separately and hence there exists a need for transformation. These departments supply different products and services to the market and every department has different business types that are categorized under product and project. Departments that focus on product business sell only their products without any services contribution and these departments are called “product” in the transformation table. On the other hand, departments that focus on project business sell integration of products and services. Table 6-9 shows the transformation map from regular definition of departments to new definition of departments.

Table 6-9: Transformation Methodology of Departments

Before Transformation	After Transformation
Com	Product
SBS	Project
A&D	Product
I&S	Project
SBT	Product
L&A	Project
PG	Project
PTD	Product
Med	Product
TS	Project
SV	Product
Corporate Departments	Project

After transformation, 59,1% of all respondents work for product departments and 40,9% of all respondents work for project departments. It is expected to get more accurate results after assigning the users to one of the two categories by country.

Table 6-10 shows the distribution of user departments in countries after transformation.

Table 6-10: Results of Transformation of Department

Results of First Transformation - Number of Respondents	Turkey	Belgium	Finland	Poland	Total
Product Business	32	10	14	25	81
Project Business	21	13	12	10	56
Total	53	23	26	35	137

These analyses show the profile of respondents and this structure of profiles provides us with the possibility to compare country specific results for each user type, position and department.

6.3 Cross – Country Comparison for Usage of Tool Features

The decision of developing a new feature or improving existing feature is taken according to result of usage ratio and satisfaction level. So that users are asked about usage and satisfaction of features because the scope of the new DSPS improvement project is determined according to the result of survey.

6.3.1 General Findings

The table in appendix B explains the number of respondents that gave a response to questions related to usage of each feature in the countries. The table in appendix B explains the usage percentage of each feature in each country. The table provides following information:

- The three most often used features of DSPS are printable view, executive summary, and comment respectively.
- The three least used features of DSPS are sending comment via e-mail, Excel uploader in financial development section and template selection regarding consolidation respectively.
- Belgium used the reporting features like .mht reporting and executive summary more than other countries because of the reporting habit during their strategic planning process.

- Poland used the help documents more than others and the main reason is that it was the year of Poland's first strategic planning process. Hence the users and system administrators needed to read help documents more than in other countries.
- Belgium used template selection regarding consolidation feature of DSPS more than other countries. Because Belgium is responsible for several countries and they need to see consolidated figures and assessments more than others.
- Comment area is used more in Turkey than in other countries. Because the users were used to use the comment area as a knowledge sharing area so that, the percent of usage is higher than for the other countries.

6.3.2 Cross-Country Comparisons

Chi-Square tests a hypothesis that two categorical variables are independent, without indicating strength or direction of the relationship. Pearson's Chi-Square is used to test the hypothesis. While the chi-square measures may indicate that there is a relationship between two variables, chi-square measures do not indicate the strength or direction of the relationship.

Null Hypothesis: There is no difference for usage of X feature between countries.

Alternate Hypothesis: At least one country differs with respect to the usage of X feature.

X (the abbreviation of feature name)

Lambda is a measure of association that reflects the proportional reduction in error when values of the independent variable are used to predict values of the dependent variable.

Goodman and Kruskal Tau is a measure of association which reflects the proportional reduction in error when values of the independent variable are used to predict values of the dependent variable.

Phi, which is only appropriate for 2x2 tables (SPSS Manual, 2001), is a chi-square based measure of association that involves dividing the chi-square statistic by the

sample size and taking the square root of the result. Cramer's V and Contingency Coefficient is a measure of association based on chi-square.

The data set is analyzed with Pearson's Chi-Square to compare usage of X (the abbreviation of feature names) for countries and if null hypothesis is rejected, it means that at least one country differs with respect to the usage of X feature, Lambda, Goodman and Kruskal Tau, Uncertainty Coefficient, Cramer's V and Contingency Coefficient is used to understand the strength or direction of the relationship.

Table 6-11 shows the selected statistics to understand if country differences exist and strength of the relationship for all features. Detailed tables are listed in appendix B.

Table 6-11: Selected Statistics from SPSS Crosstab for Usage of Features

Cross-Country Comparisons for Usage of Features	Pearson Chi-Square			Lambda		Goodman and Kruskal tau		Uncertainty Coefficient		Cramer's V and Contingency Coefficient		
	Value	df	Asymp. Sig.	Value	Approx. Sig.	Value	Approx. Sig.	Value	Approx. Sig.	Cramer Value	Con. Coef. Value	Approx. Sig.
.mht Reporting:	7.862	3.0	0.049 ^a	0.135	0.391	0.067	0.050 ^b	0.050	0.045 ^a	0.259	0.251	0.049 ^a
Printable View:	6.656	3.0	0.084 ^b	0.039	0.315	0.051	0.086 ^b	0.059	0.074 ^b	0.225	0.220	0.084 ^b
Executive Summary:	11.746	3.0	0.008 ^a	0.111	0.413	0.098	0.009 ^a	0.075	0.012 ^a	0.313	0.299	0.008 ^a
Excel Uploader in Financial Dev. Section	5.733	3.0	0.125	0.000	*	0.048	0.128	0.037	0.127	0.219	0.214	0.125
Help Documents:	18.112	3.0	0.000 ^a	0.291	0.013 ^a	0.152	0.000 ^a	0.116	0.000 ^a	0.390	0.363	0.000 ^a
Consolidation:	5.139	3.0	0.162	0.060	0.548	0.041	0.165	0.031	0.162	0.204	0.199	0.162
Template Selection Regarding Consolidation:	4.138	3.0	0.247	0.038	0.654	0.035	0.251	0.026	0.234	0.188	0.185	0.247
Comment:	1.405	3.0	0.704	0.000	*	0.012	0.707	0.009	0.711	0.110	0.109	0.704
Sending Comment via E-mail:	6.027	3.0	0.110	0.000	*	0.053	0.113	0.073	0.103	0.231	0.225	0.110

*) Cannot be computed because the asymptotic standard error equals zero.

In the table, “a” indicates the values that null hypothesis is rejected at acceptance level of 0.05 and “b” indicates the values that null hypothesis is rejected at acceptance level of 0.1.

Null hypothesis of .mht reporting, executive summary and help documents is rejected at acceptance level of 0.05 and printable view is rejected at acceptance level of 0.1. It means that at least one country differs with respect to the usage of these features. For other features, the null hypothesis can not be rejected and it means that there is no a statistically significant association between the variables. One warning message that there are 2 cell counts where the expected count is less than 5 is occurred. It means the results are fairly robust since the 2 cells are about 25%. Although Pearson Chi-Square shows that one country differs for usage of .mht reporting, printable view and executive summary, Lambda test doesn't find any association and also even others find.

The directional and symmetric values (< 0.30) of all features except help documents and executive summary show the weak association between usage and country. Additionally, some of the measures ($0.30 < \text{Value} < 0.50$) for help documents and executive summary shows the moderate association between usage of features and country.

6.4 Cross – Country Comparison for Satisfaction Level of Features

In the survey, the first part is related to the features and the second part is related to satisfaction level of respondents that have used the features in DSPPS.

6.4.1 General Findings

In the table in Appendix C, the satisfaction level of features is analyzed. The users in Turkey are more satisfied than others with all features. The table shows that the best results were achieved by comment feature that provides a knowledge sharing area to users and system administrators and the worst results leading to the lowest satisfaction were achieved by the printable view feature.

6.4.2 Cross-Country Comparisons

The satisfaction level is asked for every feature of DSPPS with a range of 5 ordered categories such as very dissatisfied, dissatisfied, neutral, satisfied and very satisfied. One-Way ANOVA is used to understand satisfaction differences among countries and test following hypotheses:

Null Hypothesis: There is no difference between countries in terms of satisfaction level for X.

Alternate Hypothesis: There is difference between countries in terms of satisfaction level for X.

(X is the abbreviation of feature names)

The table in Appendix C shows the descriptive statistics for each country and the entire data set. N indicates the size of respondents from each country. Mean shows the average values and One-Way ANOVA compares these estimates to determine if the satisfaction level means differ. The standard deviation indicates the amount of variability of the scores in each country. These values should be similar to each other for ANOVA to be appropriate. Equality will be inspected via the Levene test. The

95% confidence interval for the mean indicates the upper and lower bounds which contain the true value of the satisfaction level mean 95% of the time.

One-way ANOVA assumes that the variances of the satisfaction level for countries are all equal. The table in Appendix C shows the result of the Levene test for homogeneity of variances. Significant score of Levene test shows the acceptance of One-way ANOVA with testing homogeneity of variances for satisfaction level of each feature in countries. Levene score tests the following hypothesis:

Null Hypothesis: The variances of countries in terms of satisfaction level of X are equal.

Alternate Hypothesis: The variances of countries in terms of satisfaction level of X are not equal.

(X is the abbreviation of feature name)

Table 6-12: Selected Statistics from SPSS Results for Satisfaction Level of Features

Cross-Country Comparisons for Satisfaction Level of Features	Levene		df	ANOVA	
	Statistic	Sig.		F Value	Sig.
.mht Reporting:	2.678	0.055 ^b	3	4.929	0.004 ^a
Printable View:	1.253	0.294	3	4.406	0.006 ^a
Executive Summary:	2.496	0.066 ^b	3	11.526	0.000 ^a
Excel Uploader in Financial Dev. Section	1.544	0.218	3	3.256	0.031 ^a
Help Documents:	0.662	0.579	3	3.863	0.014 ^a
Consolidation:	0.788	0.504	3	2.722	0.051 ^b
Template Selection Regarding Consolidation:	0.920	0.438	3	5.660	0.002 ^a
Comment:	0.910	0.440	3	6.234	0.001 ^a
Sending Comment via E-mail:	5.710	0.009 ^a	3	4.572	0.020 ^a

In the table 6-12, “a” indicates the values that null hypothesis are rejected at acceptance level of 0.05 and “b” indicates the values that null hypothesis are rejected at acceptance level of 0.1.

For all features except sending comment via e-mail feature, the significance value is higher than 0.05 and it means null hypothesis can not be rejected at acceptance level of 0.05. So that, the variances for the satisfaction level of features except sending comment via e-mail in countries are equal and the assumption is justified.

Significance value of sending comment via e-mail is lower than 0.05 and null hypothesis is rejected. So that, the variances for the satisfaction level of sending

comment via e-mail in countries are not equal and the one of the assumptions of ANOVA test is not justified.

Significance value of ANOVA test indicates the significance level of the ANOVA. Small significance values (<0.05) indicate country differences.

The null hypothesis of .mht reporting, printable view, executive summary, excel uploader in financial dev. section, help documents, template selection regarding consolidation, comment, sending comment via e-mail is rejected at acceptance level of 0.05. The null hypothesis of consolidation is also rejected since it is slightly above the acceptance level of 0.05 and it also can not be rejected the acceptance level of 0.1. It means that at least one of the countries differs from the others in terms of satisfaction level for features.

The differences between countries analyzed with using Post-Hoc analysis such as Tukey HSD in case of equal variances since we are testing all pairwise comparisons post-hoc and this procedure allows us to perform tests of these comparisons with maintaining the experiment wise at significance level of 0.05 (Maxwell, S. and Harold D., 1990). The table in Appendix C lists the pairwise comparisons of the satisfaction levels of country's means for Tukey HSD. If we have not equal variances between countries at significance level of 0.05, Tamhane's T2 is used to compare satisfaction level of countries.

Mean difference shows the differences between the mean of satisfaction levels of countries. Significance value lists the probability that the satisfaction levels of country's mean difference is zero. A 95% confidence interval is constructed for each difference. If this interval contains zero, the satisfaction level of two countries do not differ.

The table in Appendix C shows the differences of satisfaction level results for every feature and test results for null and alternative hypothesizes:

Null Hypothesis: There is no difference between country A and country B in term of satisfaction level for X.

Alternate Hypothesis: There is no difference between country A and country B in term of satisfaction level for X.

(X is the abbreviation of feature name, A and B is abbreviation of country name)

Multiple comparisons show the differences of satisfaction levels between countries and the countries that accept the null hypothesis at acceptance level of .05 are classified under same group at the table 6-13.

Table 6-13: Summary Table for Homogeneous Groups of Countries in terms of Satisfaction Level for Each Feature

Country Groups According to Satisfaction Level of Features	TR	BE	FI	PO
.mht Reporting:	Group 1	Group 2	Group 1 / 2	Group 1
Printable View:	Group 1	Group 1 / 2	Group 1 / 2	Group 2
Executive Summary:	Group 1	Group 2	Group 2	Group 1
Excel Uploader in Financial Dev. Section	Group 1	Group 1 / 2	Group 2	Group 1 / 2
Help Documents:	Group 1	Group 2	Group 1 / 2	Group 1 / 2
Consolidation: (sig. level is 0.1)	Group 1	Group 1 / 2	Group 2	Group 1 / 2
Template Selection Regarding Consolidation:	Group 1	Group 2	Group 2	Group 1 / 2
Comment:	Group 1	Group 2	Group 2	Group 1 / 2
Sending Comment via E-mail*:				

*Post hoc tests are not performed for Sending Comment via e-mail feature because at least one group has fewer than two cases.

It can be seen that satisfaction level of Turkey is generally different from others. Poland is in same group for some features and Poland generally came closest to the satisfaction level in Turkey. Belgium generally positioned in different group for five features and their satisfaction level differs most in comparison to Turkey. Finland positioned itself between Belgium and Poland. The satisfaction level for printable view in Poland is different from regular behavior of Poland because they used printable view with previous version's capabilities.

6.5 Cross – Country Comparison for Satisfaction Level of Attributes

In the third part of survey, nine attributes are asked in order to understand user satisfaction. The attributes such as acceptance, necessity, accessibility, performance, business alignment, accuracy, effectiveness, user friendliness and reporting are selected among the items that are defined by Whyte G. et al. (1997) and match the DSPS structure.

6.5.1 General Findings

The table in Appendix D shows that the satisfaction of users in Turkey is higher than others for all attributes and the satisfaction level of accuracy, which means that information provided by the DSPS is a real picture of business activities, and

functions performed are a true reflection of business processes, is the highest one. The lowest satisfaction level is observed for effectiveness, which means DSPS operates in a way that is efficient, productive and useful.

6.5.2 Cross-Country Comparisons

The satisfaction level is asked within a range of 5 ordered categories such as poor, fair, average, good and excellent. One-Way ANOVA is implemented to understand differences in satisfaction level among countries and test following hypotheses:

Null Hypothesis: There is no difference between countries in term of satisfaction for X.

Alternate Hypothesis: There is difference between countries in term of satisfaction for X.

(X is the abbreviation of attribute names)

The table in Appendix D, the satisfaction level of attributes is analyzed. One-way ANOVA assumes that the variances of the perception for countries are all equal. Hence Levene score is necessary to test the following hypothesis:

Null Hypothesis: The variances of countries in terms of satisfaction level of Y are equal.

Alternate Hypothesis: The variances of countries in terms of satisfaction level of Y are not equal.

(Y is the abbreviation of attribute name)

Table 6-14: Selected Statistics from SPSS Results for Satisfaction Level of Attributes

Cross-Country Comparisons for Satisfaction Level of Attributes	Levene		df	ANOVA	
	Statistic	Sig.		F Value	Sig.
Acceptance	6.352	0.000 ^a	3	10.457	0.000 ^a
Necessity	4.262	0.007 ^a	3	10.334	0.000 ^a
Accessibility	3.082	0.030 ^a	3	11.544	0.000 ^a
Performance	4.070	0.008 ^a		19.196	0.000 ^a
Business alignment	0.408	0.747	3	7.040	0.000 ^a
Accuracy	1.825	0.146	3	5.844	0.000 ^a
Effectiveness	1.861	0.139	3	11.477	0.000 ^a
User Friendliness	2.761	0.045 ^a	3	7.029	0.000 ^a
Reporting	5.184	0.002 ^a	3	7.495	0.000 ^a

In the table 6-14, “a” indicates the values that null hypothesis are rejected at acceptance level of 0.05.

For business alignment, accuracy and effectiveness, the significance value is higher than 0.05 and it means null hypothesis can not be rejected at acceptance level of 0.05. So that, the variances for the satisfaction level of attributes in countries are equal and the assumption is justified.

Significance value of acceptance, necessity, accessibility, performance, user friendliness and reporting is lower than 0.05 and null hypothesis is rejected. So that, the variances for the satisfaction level of these attributes in countries are not equal and the one of the assumptions of ANOVA test is not justified.

Significance value of ANOVA test indicated the significant level of the ANOVA. Small significance values (<.05) indicate country differences.

The null hypothesis of all attributes is rejected at acceptance level of 0.05. It means that at least one of the countries differs from the others in terms of satisfaction level for attributes.

The differences between countries analyzed with using Post-Hoc analysis such as Tukey HSD in case of equal variances and Tamhane’s T2 in case of not equal variances between countries. The table in Appendix D lists the pairwise comparisons of the satisfaction levels of country’s means for Tukey HSD.

The table in Appendix D shows the differences of satisfaction level results for every feature and test results for null and alternative hypotheses:

Null Hypothesis: There is no difference between country A and country B in term of satisfaction level for Z.

Alternate Hypothesis: There is no difference between country A and country B in term of satisfaction level for Z.

(Z is the abbreviation of attribute name, A and B is abbreviation of country name)

Multiple comparisons show the differences of satisfaction levels for attributes between countries and the countries that accept the null hypothesis at acceptance level .05 are classified under same group at the table 6-15.

Table 6-15: Summary Table for Homogeneous Groups of Countries in terms of Satisfaction Level for Each Feature

Country Groups According to Satisfaction Level of Attributes	TR	BE	FI	PO
Acceptance	Group 1	Group 2	Group 2	Group 1
Necessity	Group 1	Group 3	Group 2 / 3	Group 1 / 2
Accessibility	Group 1	Group 3	Group 2 / 3	Group 1 / 2
Performance	Group 1	Group 2	Group 2	Group 1
Business Alignment	Group 1	Group 2	Group 1 / 2	Group 1
Accuracy	Group 1	Group 3	Group 2 / 3	Group 1 / 2
Effectiveness	Group 1	Group 2	Group 2	Group 1
User Friendliness	Group 1	Group 2	Group 1 / 2	Group 1
Reporting	Group 1	Group 3	Group 2 / 3	Group 1 / 2

Table 6-15 shows that the satisfaction level of Turkey is generally different from others. Poland is sometimes in the same group as Turkey for some attributes and Poland generally positioned closest to satisfaction levels to Turkey. Belgium and Finland completely positioned in different groups for all attributes and their satisfaction level differ most in comparison with Turkey.

6.6 Cross – Country Comparison for General Satisfaction

In the last part of the survey, the general satisfaction of the user considering the process, content and tool satisfaction is asked.

6.6.1 General Findings

The table in Appendix E shows that the general satisfaction level of users in Siemens Poland (Mean = 3.85) is higher than others and that general satisfaction in Turkey (Mean = 3.81) ranks second after Poland. The lowest satisfaction level is in Belgium (Mean = 2.71).

6.6.2 Cross-Country Comparisons

The satisfaction level is asked within a range of 5 ordered categories which are very satisfied, satisfied, neutral, dissatisfied and very dissatisfied. One-Way ANOVA is implemented to understand differences in satisfaction level among countries and test following hypotheses:

Null Hypothesis: There is no difference between countries in term of general satisfaction.

Alternate Hypothesis: There is difference between countries in term of general satisfaction.

The table in Appendix E, the general satisfaction level is analyzed. One-way ANOVA assumes that the variances of the perception for countries are all equal. Hence Levene score is necessary to test the following hypothesis:

Null Hypothesis: The variances of countries in terms of general satisfaction level are equal.

Alternate Hypothesis: The variances of countries in terms of general satisfaction level are not equal.

Table 6-16: Selected Statistics from SPSS Results for General Satisfaction Level

General Satisfaction	Levene		df	ANOVA	
	Statistic	Sig.		F Value	Sig.
General Satisfaction	6.159	0.001 ^a	3	13.665	0.000 ^a

In Table 6-16, “a” indicates the values that null hypothesis are rejected by at acceptance level of 0.05.

Significance value of general satisfaction is lower than 0.05 and null hypothesis is rejected. So that, the variances for the satisfaction level of these attributes in

countries are not equal and the one of the assumptions of ANOVA test is not justified.

Significance value of ANOVA test indicated the significance level of the ANOVA. Small significance values (<.05) indicate country differences. The null hypothesis of all attributes is rejected at acceptance level of 0.05. It means that at least one of the countries differs from the others in terms of general satisfaction level.

The differences between countries analyzed with using Post-Hoc analysis such as Tamhane's T2 in case of not equal variances. The table in Appendix E lists the pairwise comparisons of the satisfaction levels of country's means for Tukey HSD.

The table in Appendix E shows the differences of general satisfaction level results and test results for null and alternative hypotheses:

Null Hypothesis: There is no difference between country A and country B in term of general satisfaction level.

Alternate Hypothesis: There is no difference between country A and country B in term of general satisfaction level.

(A and B is abbreviation of country name)

Multiple comparisons show the differences of general satisfaction levels between countries and the countries that accept the null hypothesis at acceptance level .05 are classified under the same group in Table 6-17.

Table 6-17: Summary Table for Homogeneous Groups of Countries in terms of General Satisfaction Level

Country Groups According to General Satisfaction Level	TR	BE	FI	PO
General Satisfaction	Group 1	Group 2	Group 2	Group 1

It is seen that general satisfaction level of Poland and Turkey is different from Belgium and Poland. This result is similar to other satisfaction analyses in previous chapter.

It is obviously seen that Siemens Turkey and Siemens Poland is satisfied more than Siemens Belgium and Siemens Finland. The differences between satisfaction levels of countries can be occurred by several reasons which are not analyzed in this master thesis. Additionally, information that is collected in questionnaire is not enough to

make detailed analyze for reasons. According to my experiences, the general satisfaction can be affected by level of expertise of system administrators in countries, number of years for implementation of strategic planning process, number of years for implementation of DSPPS, bandwidth between technical infrastructure and users, commitment of top management, syndrome of “not invented here” of users, syndrome of “I am better” of users, previous experiences with such a tool, personal relations.

6.7 Comparison of Profiles for General Satisfaction

In last part of survey, some information about respondents is collected and the general satisfaction level for positions will be compared. Positions are transformed to two groups such as strategy makers and strategy planners according to roles in strategic planning process. User types are transformed to two groups such as normal users and administrators according to roles in DSPPS. Departments are transformed to two groups such as product and project business.

6.7.1 General Findings

General satisfaction level of strategy makers (Mean = 3.53) is higher than strategy planners (Mean = 3.37). General satisfaction level of admins (Mean = 4.15) is higher than normal users (Mean = 3.29). General satisfaction level of users who work for product and project business seems almost equal (Mean of product business = 3.45, mean of project business = 3.48).

6.7.2 Comparison of Profiles

The satisfaction level is asked within a range of 5 ordered categories which are very satisfied, satisfied, neutral, dissatisfied and very dissatisfied. Independent T - Test is implemented to understand differences in satisfaction level among positions and test following hypotheses:

Null Hypothesis: There is no difference between profile classifications X in term of general satisfaction.

Alternate Hypothesis: There is difference between profile classifications X in term of general satisfaction.

(X is the abbreviation of profile classification type such as position, user type and department)

The table in Appendix F, the general satisfaction level is analyzed and Levene score is firstly necessary to test the following hypothesis:

Null Hypothesis: The variances of profile classification X in terms of general satisfaction level are equal.

Alternate Hypothesis: The variances of profile classification X in terms of general satisfaction level are not equal.

(X is the abbreviation of profile classification type such as position, user type and department)

Table 6-18: Selected Statistics from SPSS Results for General Satisfaction Level

Comparison of Profiles in terms of General Satisfaction	Levene			Independent T - Test	
	Statistic	Sig.	df	t Value	Sig. (2-tailed)
Positions (Strategy Makers, Strategy Planners)	3.270	0.073 ^b	96.6	-0.847	0.399
User Types (Normal Users, Admins)	5.488	0.021 ^a	56	-5.070	0.000 ^a
Departments (Product Business, Project Business)	0.025	0.875	130	-0.180	0.857

In the table, “a” indicates the values that null hypothesis are rejected at acceptance level of 0.05 and “b” indicates the values that null hypothesis are rejected at acceptance level of 0.1.

According to Levene statistic, null hypothesis of differences between departments can not be rejected at acceptance level of 0.05 or 0.1 and it means the variances of general satisfaction level of users from different departments are equal. Null hypothesis of differences between positions and user types is rejected at acceptance level of 0.05 and 0.1 and it means the variances of general satisfaction level of different positions and user types are not equal.

Related t value shows if the differences between profile elements exist. Null hypothesis of differences between user types is only rejected at acceptance level of 0.05 and 0.1. It means that there is difference between general satisfaction level of normal users and admins in term of general satisfaction. On the other hand, working for different departments or position of users in company doesn't make any statistically significant differences.

6.8 Regression Analysis

Two different regression analyses are done to understand causal relationship between elements of satisfaction elements - overall satisfaction and between elements of satisfaction elements and acceptance. In the questionnaire, there are some questions which aim to measure satisfaction of different perspectives. As explained before, some questions are related about satisfactions of tool features (.mht reporting, executive summary etc.) and some are related about attributes (accessibility, effectiveness, reporting etc.) which shape the general satisfaction and some are related about process elements (quality and response speed of local strategic planning department support, trainings etc.). In the regression analysis, the criteria are selected which are related about attributes and process elements. On the other hand, three dummy criteria are added to understand whether country specific difference is significant or not.

6.8.1 Regression Analysis of General Satisfaction

Stepwise regression method is used to describe the relationship between general satisfaction level and selected variables. It will give us the simplest equation with the best predictive power according to R^2 . Stepwise regression came to optimized solution at the sixth model and table 6-19 shows the entered and removed criteria. The detailed tables are listed in Appendix G.

Table 6-19: Entered and Removed Variables in Regression Analysis of General Satisfaction

Criteria Type	All Independent Variables	Entered / Removed
Tool	Acceptance	Entered
Tool	Necessity	Entered
Tool	Accessibility	Removed
Tool	Performance	Removed
Tool	Business Alignment	Removed
Tool	Accuracy	Removed
Tool	Effectiveness	Entered
Tool	User Friendliness	Entered
Tool	Reporting	Removed
Process	quality of local strategic planning department support:	Removed
Process	response speed of local strategic planning department support	Entered
Process	trainings	Removed
Process	deadline	Removed
Dummy	Belgium	Removed
Dummy	Finland	Removed
Dummy	Poland	Entered
Method: Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100). Dependent Variable: General Satisfaction Considering the process, content and tool satisfaction		

Sixteen criteria are evaluated with stepwise regression and only six of them are entered to regression analysis. The four of entered criteria are related about tools such as acceptance, necessity, effectiveness, user friendliness and one of them is related about response speed of local strategic planning department. Last criterion is the one of the dummies and means that general satisfaction level of Siemens Poland shows different characteristic than other counties.

Table 6-20: Summary Table of Stepwise Regression Results of General Satisfaction

Dependent Variable: Considering the process, content and tool satisfaction				
Multiple R	0.907			
R Square	0.822			
Adjusted R Square	0.809			
Analysis of Variance				
	df	Sum of Square	Mean Square	
Regression	6	78.889	13.148	
Residual	84	17.067		
F Score: 64.7		Sig. F: 0.000		
Entered Variables in Final Equation				
	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	-0.368	0.261	-1.413	0.161
Effectiveness	0.225	0.091	2.481	0.015
Acceptance	0.304	0.083	3.656	0.000
response speed of local strategic planning department support	0.211	0.058	3.630	0.000
Poland	0.291	0.109	2.669	0.009
Necessity	0.198	0.066	2.980	0.004
User Friendliness	0.156	0.063	2.493	0.015

As it is shown in table, multiple R equals to 0,907 which indicates the strong relationship between general satisfaction and entered criteria. R^2 which tells us how much of the variance we have explained equals to 0.82 that means the model fits the data very well.

Constant of equation is a minus figure additionally it is not significant. Minus constant shows the difficulty of making users satisfy in terms of strategic planning

systems. Acceptance, using DSPS in Siemens Poland affects the overall satisfaction more than others. Siemens Poland and Siemens Turkey were in the same group according to overall satisfaction results but Siemens Poland behaves differently in the relations between criteria and general satisfaction level. The main reason can be users in Siemens Poland tend to give more positive response than users in Siemens Turkey to question of general satisfaction. On the other hand, one of the entered criteria is related about local strategic planning department support and it indicates the response speed of strategy planners which is not directly related with tool in countries affect the satisfaction level of tool.

According to regression analysis, the most effective criteria are defined to make users more satisfied. It is logically expected to invest some money on those criteria in the scope of DSPS improvement projects.

6.8.2 Regression Analysis of Acceptance

Stepwise regression method is used to describe the relationship between acceptance level and selected variables. Stepwise regression came to optimized solution at the sixth model and table 6-21 shows the entered and removed criteria. The detailed tables are listed in Appendix G.

Table 6-21: Entered and Removed Variables in Regression Analysis of Acceptance

Criteria Type	All Independent Variables	Entered / Removed
Tool	Necessity	Removed
Tool	Accessibility	Removed
Tool	Performance	Entered
Tool	Business Alignment	Entered
Tool	Accuracy	Removed
Tool	Effectiveness	Entered
Tool	User Friendliness	Removed
Tool	Reporting	Removed
Process	quality of local strategic planning department support:	Removed
Process	response speed of local strategic planning department support	Removed
Process	trainings	Removed
Process	deadline	Removed
Dummy	Belgium	Removed
Dummy	Finland	Removed
Dummy	Poland	Removed
Method: Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100). Dependent Variable: Acceptance		

Fifteen criteria are evaluated with stepwise regression and only three of them are entered to regression analysis. All entered criteria are related about tools such as

performance, business alignment and effectiveness and there is no country specific differences regarding regression equation of acceptance.

Table 6-22: Summary Table of Stepwise Regression Results of Acceptance

Dependent Variable: Acceptance				
Multiple R	0.854			
R Square	0.730			
Adjusted R Square	0.721			
Analysis of Variance				
	df	Sum of Square	Mean Square	
Regression	3	68.061	22.687	
Residual	89	25.186	0.283	
F Score: 80.2		Sig. F: 0.000		
Entered Variables in Final Equation				
	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	0.653	0.200	3.265	0.002
Effectiveness	0.325	0.089	3.646	0.000
Business Alignment	0.368	0.084	4.388	0.000
Performance	0.173	0.074	2.329	0.022

As it is shown in table, multiple R equals to 0,854 which indicates the strong relationship between acceptance and entered criteria. R^2 which tells us how much of the variance we have explained equals to 0.73 that means the model fits the data very well.

All entered variables are significant and business alignment affects the level of acceptance more than other criteria. The constant in acceptance equation is a positive figure and significant whereas the constant in general satisfaction is a negative figure and is not sufficient. Effectiveness is only one criteria which entered both equations.

According to result of regression analysis, the most effective criteria are defined to make users more satisfied. It is logically expected to invest some money on those criteria in the scope of DSPS improvement projects.

7. CONCLUSION

7.1 General Remarks on Findings

This master thesis is focused on three dimensions of dynamic strategic planning such as strategic content, dynamic process, and tools. A detailed literature review and a case study which is used in business life is done and result of case study is linked to literature review part. In the conclusion part, we propose a set of results.

The strategic planning tools create significant opportunities to increase the effectiveness and efficiency of the strategic planning process. The tools help companies to better utilize the bottom-up strategy initiatives. It is also possible to raise the level of understanding of top managers, which is essential in the top-down or bottom-up DSP process.

Sustained competitive advantages require continuous improvement for a company to maintain its strong or weak position on the market. Although new products / services are on their way, strengthening one's internal position can also be effective if it results in the introduction of new and/or more sophisticated tools that allow a firm to make faster and better decisions.

With the current time pressure on strategy makers and planners, these tools can yield useful data quickly and at a reasonable cost. More importantly, with today's revolution in information technology, the tools can be used to secure important, structured information from rank and file employees, supply chain vendors, strategic partners, customers, informed observers and stockholders/members who have often been left out of the strategic planning efforts in the past. Due to this revolution in information technology, strategic planning systems of the future will be more effective, more inclusive and produced in a better way, more reliable, will give more robust information in a shorter time frame, and all this at a lower cost than the old DSPS we used just before the turn of the century.

In the case study, user perception for Dynamic Strategic Planning System is analyzed for four different Siemens companies located in different countries.

According to differences and similarities in satisfaction levels, each country is grouped with others who have similar satisfaction levels. On the other hand, countries are generally in the same group with same countries because of same satisfaction pattern. For instance, users in Siemens Turkey and Siemens Poland are generally at the more positive side whereas users in Siemens Belgium and Siemens Finland are generally on neutral or negative side in the questionnaire. Additionally, the users in Turkey are the most satisfied than other for all features and the users in Siemens Belgium are generally less satisfied one for all satisfaction elements.

It is obviously seen that Siemens Turkey and Siemens Poland are satisfied more than Siemens Belgium and Siemens Finland. The differences between satisfaction levels of countries can be occurred by several reasons which are not analyzed in this master thesis. Additionally, information that is collected in questionnaire is not enough to make detailed analyze for reasons. According to my experiences, the general satisfaction can be affected by level of expertise of system administrators in countries, number of years for implementation of strategic planning process, number of years for implementation of DSPPS, bandwidth between technical infrastructure and users, commitment of top management, syndrome of “not invented here” of users, syndrome of “I am better” of users, previous experiences with such a tool, personal relations.

According to results, the owner of tool, Siemens Turkey – Corporate Strategies and Consulting Department – decided to make some changes to increase users’ satisfaction level. The criteria which make more effect on satisfaction level are founded in regression analysis. Siemens Turkey invests some amount of money to improve capabilities of DSPPS. For instance, user friendliness and effectiveness was the one of the criteria in final equation of regression and Siemens Turkey worked with an external consultant who is specialist on user interface and user usability to increase user satisfaction and Siemens Turkey decided to change technical infrastructure to make DSPPS more effective with more performance.

7.2 Future Works

We can list the possible future works under five bullets:

- The scope of thesis is limited with Siemens Turkey, Siemens Belgium, Siemens Finland and Siemens Poland. The number of countries can be expanded with other Mediterranean countries like Siemens Spain, Siemens Greece.

- The scope of thesis is limited with Siemens and this questionnaire can be implemented to strategic planning system of some internationally companies to see cross-company and cross-country impacts.
- The cultural differences between countries are not analyzed in this master thesis. It makes sense to see cultural effects on user satisfaction level.
- As we discussed in previous chapters, impact of internal and external criteria which affect the satisfaction level like level of expertise of system administrators in countries, commitment of top management etc. can be analyzed.
- The satisfaction levels are analyzed only for a strategic planning system. In future works, the user satisfaction level can be analyzed for other information systems and it allows making cross-country and cross-system results.

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9. APPENDICES

Appendix A: The Survey Questionnaire

DSPS Satisfaction Survey - 04/05
[Exit this survey >>](#)

1. DSPS Satisfaction Survey

Dear DSPS User,

We are conducting DSPS satisfaction survey to evaluate your satisfaction and collect your feedback in order to provide you a unique planning environment.

Your valuable response would be appreciated,

Best Wishes,

DSPS Team
think future + act now!

**1. Have you ever tried following functionalities of DSPS?
If you answer is "yes", How satisfied are you with functionalities?**

	Usage	If Yes, Satisfaction
.mht Reporting	<input type="text"/>	<input type="text"/>
Printable View	<input type="text"/>	<input type="text"/>
Executive Summary	<input type="text"/>	<input type="text"/>
Excel Uploader in Financial Dev. Section	<input type="text"/>	<input type="text"/>
Help Documents	<input type="text"/>	<input type="text"/>
Consolidation	<input type="text"/>	<input type="text"/>
Template Selection Regarding Consolidation	<input type="text"/>	<input type="text"/>
Comment	<input type="text"/>	<input type="text"/>
Sending Comment via e-mail	<input type="text"/>	<input type="text"/>

2. Please rate your perception for following dimensions:

Explanation of Dimensions:

Acceptance: The degree of acceptance level of DSPS.

Necessity: The degree to which the DSPS is essential for running important aspects of business.

Accessibility: The degree to which the DSPS provides accessibility to strategic plans.

Business Alignment: The degree to which the DSPS operates in line with business objectives by supporting and complimenting business process.

Accuracy: The degree to which information provided by the DSPS is true picture of business activities, and functions performed are a true reflection of business processes.

Effectiveness: The degree to which the DSPS operates in a way that is efficient, productive and useful.

Friendliness: The degree to which the DSPS is quick to learn, simple to use and generally agreeable.

Reporting: The degree to which reports produced by the DSPS are obtainable, accurate and useful.

	Excellent	Good	Average	Fair	Poor
Acceptance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Necessity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Alignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accuracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effectiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
User Friendliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**3. Wishlist for desired tool specification:
(new specifications or specifications to be improved)**

4. Please select 3 most important section in DSPS

1st - The Most Important Section 2nd - The Most Important Section 3rd - The Most Important Section

DSPS Sections:

5. Please select the 3 less important section in DSPS

From the last - The Less Important Section From the last - The Less Important Section From the last - The Less Important Section

DSPS Sections:

**6. Wishlist for desired content :
(new areas or areas to be improved)**

7. Please rate the quality of local strategic planning department support:

Excellent Good Average Fair Poor

8. Please rate the response speed of local strategic planning department support

Excellent Good Average Fair Poor

**9. Have you ever get any support provided by Siemens Turkey DSPS Team?
(If your answer is "yes", please rate the following two questions, otherwise click to "Next >>")**

10. Please rate the quality of Siemens Turkey DSPS support

Excellent Good Average Fair Poor

11. Please rate the response speed of Siemens Turkey DSPS support

Excellent Good Average Fair Poor

12. How satisfied are you with trainings?

Very Satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

13. How satisfied are you with deadlines?

Very Satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

**14. Wishlist for desired strategic planning process:
(new approaches or areas to be improved)**

**15. Considering the process, content and tool satisfaction:
Overall, how satisfied are you with DSPS?**

Very Satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

16. Would you advise DSPS to someone else?

Yes No

**17. General Suggestions / Comments / Remarks
(Experience, appreciation, complaint, marketing, potential customers etc.)**

*** 18. Your position in Siemens** *** 19. Please select your user type in DSPS:** *** 20. Please select your group / department:**

21. Your e-mail address (optional):

[Done >>](#)

Appendix B: Results of Features Usage

Table 9-1: Overview Results of Number of Respondents for Features

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
.mht Reporting - Usage * Country	117	83,6%	23	16,4%	140	100,0%
Printable View - Usage * Country	131	93,6%	9	6,4%	140	100,0%
Executive Summary - Usage * Country	120	85,7%	20	14,3%	140	100,0%
Excel Uploader in Financial Dev. Section - Usage * Country	119	85,0%	21	15,0%	140	100,0%
Help Documents - Usage * Country	119	85,0%	21	15,0%	140	100,0%
Consolidation - Usage * Country	124	88,6%	16	11,4%	140	100,0%
Template Selection Regarding Consolidation - Usage * Country	117	83,6%	23	16,4%	140	100,0%
Comment - Usage * Country	117	83,6%	23	16,4%	140	100,0%
Sending Comment via e-mail - Usage * Country	113	80,7%	27	19,3%	140	100,0%

Table 9-2: Overview Results of Usage of DSPS Features

Overview Results of Usage of DSPS Features															
	Country												Total		
	Turkey			Belgium			Finland			Poland			Valid N	Mean	SD
	Valid N	Mean	SD	Valid N	Mean	SD	Valid N	Mean	SD	Valid N	Mean	SD			
.mht Reporting - Usage	43	,47	,50	20	,75	,44	24	,42	,50	30	,67	,48	117	,56	,50
Printable View - Usage	50	,88	,33	21	,95	,22	25	,80	,41	35	,71	,46	131	,83	,38
Executive Summary - Usage	45	,76	,43	20	,75	,44	24	,42	,50	31	,81	,40	120	,70	,46
Excel Uploader in Financial Dev. Section - Usage	43	,49	,51	22	,32	,48	25	,28	,46	29	,24	,44	119	,35	,48
Help Documents - Usage	45	,58	,50	20	,40	,50	24	,25	,44	30	,80	,41	119	,54	,50
Consolidation - Usage	49	,67	,47	20	,70	,47	25	,44	,51	30	,53	,51	124	,60	,49
Template Selection Regarding Consolidation - Usage	42	,48	,51	20	,55	,51	25	,28	,46	30	,50	,51	117	,45	,50
Comment - Usage	42	,71	,46	19	,58	,51	25	,64	,49	31	,71	,46	117	,68	,47
Sending Comment via e-mail - Usage	41	,22	,42	20	,05	,22	24	,04	,20	28	,11	,31	113	,12	,33

Table 9-3: Usage of .mht Reporting Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
.mht Reporting - Usage	No	23	5	14	10	52
	Yes	20	15	10	20	65
Total		43	20	24	30	117

Table 9-4: Chi-Square Tests for .mht Usage

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,862 ^a	3	,049
Likelihood Ratio	8,062	3	,045
Linear-by-Linear Association	1,213	1	,271
N of Valid Cases	117		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,89.

Table 9-5: Nominal Directional Measures for .mht Usage in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,056	,063	,858	,391
		.mht Reporting - Usage Dependent	,135	,146	,858	,391
		Country Dependent	,000	,000	, ^c	, ^c
Goodman and Kruskal tau		.mht Reporting - Usage Dependent	,067	,045		,050 ^d
		Country Dependent	,021	,015		,060 ^d
Uncertainty Coefficient		Symmetric	,034	,023	1,458	,045 ^e
		.mht Reporting - Usage Dependent	,050	,034	1,458	,045 ^e
		Country Dependent	,026	,018	1,458	,045 ^e

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Cannot be computed because the asymptotic standard error equals zero.
d. Based on chi-square approximation
e. Likelihood ratio chi-square probability.

Table 9-6: Symmetric Measures for Usage of .mht in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,259	,049
	Cramer's V	,259	,049
	Contingency Coefficient	,251	,049
N of Valid Cases		117	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-7: Usage of Printable View Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Printable View	No	6	1	5	10	22
- Usage	Yes	44	20	20	25	109
Total		50	21	25	35	131

Table 9-8: Chi-Square Tests for Printable View

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,656 ^a	3	,084
Likelihood Ratio	6,950	3	,074
Linear-by-Linear Association	4,660	1	,031
N of Valid Cases	131		

a. 2 cells (25,0%) have expected count less than 5. The minimum expected count is 3,53.

Table 9-9: Nominal Directional Measures for printable view in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,039	,038	1,004	,315
		Printable View - Usage Dependent	,000	,000		^c
		Country Dependent	,049	,048	1,004	,315
	Goodman and Kruskal tau	Printable View - Usage Dependent	,051	,037		,086 ^d
		Country Dependent	,017	,014		,082 ^d
	Uncertainty Coefficient	Symmetric	,030	,021	1,388	,074 ^e
Printable View - Usage Dependent		,059	,041	1,388	,074 ^e	
Country Dependent		,020	,014	1,388	,074 ^e	

a. Not assuming the null hypothesis.
 b. Using the asymptotic standard error assuming the null hypothesis.
 c. Cannot be computed because the asymptotic standard error equals zero.
 d. Based on chi-square approximation
 e. Likelihood ratio chi-square probability.

Table 9-10: Symmetric Measures for Usage of printable view in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,225	,084
	Cramer's V	,225	,084
	Contingency Coefficient	,220	,084
N of Valid Cases		131	

a. Not assuming the null hypothesis.
 b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-11: Usage of .Executive Summary Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Executive Summary - Usage	No	11	5	14	6	36
	Yes	34	15	10	25	84
Total		45	20	24	31	120

Table 9-12: Chi-Square Tests for Executive Summary

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,747 ^a	3	,008
Likelihood Ratio	10,997	3	,012
Linear-by-Linear Association	,192	1	,661
N of Valid Cases	120		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6,00.

Table 9-13: Nominal Directional Measures for Executive Summary Usage in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,063	,077	,800	,424
		Executive Summary - Usage Dependent	,111	,128	,819	,413
		Country Dependent	,040	,065	,601	,548
	Goodman and Kruskal tau	Executive Summary - Usage Dependent	,098	,059		,009 ^c
		Country Dependent	,029	,019		,015 ^c
	Uncertainty Coefficient	Symmetric	,047	,028	1,644	,012 ^d
Executive Summary - Usage Dependent		,075	,045	1,644	,012 ^d	
Country Dependent		,034	,021	1,644	,012 ^d	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on chi-square approximation
d. Likelihood ratio chi-square probability.

Table 9-14: Symmetric Measures for Usage of Executive Summary in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,313	,008
	Cramer's V	,313	,008
	Contingency Coefficient	,299	,008
N of Valid Cases		120	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-15: Usage of Excel Uploader Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Excel Uploader in Financial Dev. Section - Usage	No	22	15	18	22	77
	Yes	21	7	7	7	42
Total		43	22	25	29	119

Table 9-16: Chi-Square Tests for Excel Uploader

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,733 ^a	3	,125
Likelihood Ratio	5,710	3	,127
Linear-by-Linear Association	5,074	1	,024
N of Valid Cases	119		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7,76.

Table 9-17: Nominal Directional Measures for Excel Uploader in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,000	,000	, ^c	, ^c
		Excel Uploader in Financial Dev. Section - Usage Dependent	,000	,000	, ^c	, ^c
		Country Dependent	,000	,000	, ^c	, ^c
Goodman and Kruskal tau		Excel Uploader in Financial Dev. Section - Usage Dependent	,048	,040		,128 ^d
		Country Dependent	,020	,017		,065 ^d
Uncertainty Coefficient		Symmetric	,024	,020	1,204	,127 ^e
		Excel Uploader in Financial Dev. Section - Usage Dependent	,037	,031	1,204	,127 ^e
		Country Dependent	,018	,015	1,204	,127 ^e

a. Not assuming the null hypothesis.
 b. Using the asymptotic standard error assuming the null hypothesis.
 c. Cannot be computed because the asymptotic standard error equals zero.
 d. Based on chi-square approximation
 e. Likelihood ratio chi-square probability.

Table 9-18: Symmetric Measures for Usage of Excel Uploader in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,219	,125
	Cramer's V	,219	,125
	Contingency Coefficient	,214	,125
N of Valid Cases		119	

a. Not assuming the null hypothesis.
 b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-19: Usage of Help Documents in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Help Documents - Usage	No	19	12	18	6	55
	Yes	26	8	6	24	64
Total		45	20	24	30	119

Table 9-20: Chi-Square Tests for Help Documents

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18,112 ^a	3	,000
Likelihood Ratio	19,061	3	,000
Linear-by-Linear Association	1,117	1	,291
N of Valid Cases	119		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9,24.

Table 9-21: Nominal Directional Measures for Help Documents in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,124	,046	2,473	,013
		Help Documents - Usage Dependent	,291	,102	2,473	,013
		Country Dependent	,000	,000	, ^c	, ^c
	Goodman and Kruskal tau	Help Documents - Usage Dependent	,152	,061		,000 ^d
		Country Dependent	,047	,020		,001 ^d
	Uncertainty Coefficient	Symmetric	,079	,034	2,327	,000 ^e
		Help Documents - Usage Dependent	,116	,050	2,327	,000 ^e
		Country Dependent	,060	,026	2,327	,000 ^e

a. Not assuming the null hypothesis.
 b. Using the asymptotic standard error assuming the null hypothesis.
 c. Cannot be computed because the asymptotic standard error equals zero.
 d. Based on chi-square approximation
 e. Likelihood ratio chi-square probability.

Table 9-22: Symmetric Measures for Usage of Help Documents in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,390	,000
	Cramer's V	,390	,000
	Contingency Coefficient	,363	,000
N of Valid Cases		119	

a. Not assuming the null hypothesis.
 b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-23: Usage of Consolidation Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Consolidation - Usage	No	16	6	14	14	50
	Yes	33	14	11	16	74
Total		49	20	25	30	124

Table 9-24: Chi-Square Tests for Consolidation

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,139 ^a	3	,162
Likelihood Ratio	5,133	3	,162
Linear-by-Linear Association	2,962	1	,085
N of Valid Cases	124		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8,06.

Table 9-25: Nominal Directional Measures for Consolidation in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,024	,039	,601	,548
		Consolidation - Usage Dependent	,060	,097	,601	,548
		Country Dependent	,000	,000	, ^c	, ^c
	Goodman and Kruskal tau	Consolidation - Usage Dependent	,041	,036		,165 ^d
		Country Dependent	,014	,013		,159 ^d
	Uncertainty Coefficient	Symmetric	,021	,018	1,142	,162 ^e
Consolidation - Usage Dependent		,031	,027	1,142	,162 ^e	
Country Dependent		,016	,014	1,142	,162 ^e	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Cannot be computed because the asymptotic standard error equals zero.
d. Based on chi-square approximation
e. Likelihood ratio chi-square probability.

Table 9-26: Symmetric Measures for Usage of Consolidation in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,204	,162
	Cramer's V	,204	,162
	Contingency Coefficient	,199	,162
N of Valid Cases		124	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-27: Usage of Template Selection Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Template Selection Regarding Consolidation - Usage	No	22	9	18	15	64
	Yes	20	11	7	15	53
Total		42	20	25	30	117

Table 9-28: Chi-Square Tests for Template Selection Feature in Countries

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,138 ^a	3	,247
Likelihood Ratio	4,270	3	,234
Linear-by-Linear Association	,144	1	,705
N of Valid Cases	117		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9,06.

Table 9-29: Nominal Directional Measures for Template Selection in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,016	,035	,448	,654
		Template Selection Regarding Consolidation - Usage Dependent	,038	,083	,448	,654
		Country Dependent	,000	,000	, ^c	, ^c
Goodman and Kruskal tau		Template Selection Regarding Consolidation - Usage Dependent	,035	,032		,251 ^d
		Country Dependent	,010	,010		,312 ^d
		Uncertainty Coefficient				
Uncertainty Coefficient		Symmetric	,018	,017	1,060	,234 ^e
		Template Selection Regarding Consolidation - Usage Dependent	,026	,025	1,060	,234 ^e
		Country Dependent	,014	,013	1,060	,234 ^e

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Cannot be computed because the asymptotic standard error equals zero.
d. Based on chi-square approximation
e. Likelihood ratio chi-square probability.

Table 9-30: Symmetric Measures for Usage of printable view in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,188	,247
	Cramer's V	,188	,247
	Contingency Coefficient	,185	,247
N of Valid Cases		117	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-31: Usage of Comment Feature in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Comment	No	12	8	9	9	38
- Usage	Yes	30	11	16	22	79
Total		42	19	25	31	117

Table 9-32: Chi-Square Tests for Comment

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,405 ^a	3	,704
Likelihood Ratio	1,379	3	,711
Linear-by-Linear Association	,004	1	,951
N of Valid Cases	117		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6,17.

Table 9-33: Nominal Directional Measures for Comment in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,000	,000	, ^c	, ^c
		Comment - Usage Dependent	,000	,000	, ^c	, ^c
		Country Dependent	,000	,000	, ^c	, ^c
	Goodman and Kruskal tau	Comment - Usage Dependent	,012	,021		,707 ^d
		Country Dependent	,004	,006		,737 ^d
	Uncertainty Coefficient	Symmetric	,006	,010	,583	,711 ^e
		Comment - Usage Dependent	,009	,016	,583	,711 ^e
		Country Dependent	,004	,008	,583	,711 ^e

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Cannot be computed because the asymptotic standard error equals zero.
d. Based on chi-square approximation
e. Likelihood ratio chi-square probability.

Table 9-34: Symmetric Measures for Usage of Comment in Countries

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,110	,704
	Cramer's V	,110	,704
	Contingency Coefficient	,109	,704
N of Valid Cases		117	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Table 9-35: Usage of Printable Sending Comment via E-mail in Countries

Crosstab						
Count		Country				Total
		Turkey	Belgium	Finland	Poland	
Sending Comment via e-mail - Usage	No	32	19	23	25	99
	Yes	9	1	1	3	14
Total		41	20	24	28	113

Table 9-36: Chi-Square Tests for Sending Comment via E-mail

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,027 ^a	3	,110
Likelihood Ratio	6,184	3	,103
Linear-by-Linear Association	2,606	1	,106
N of Valid Cases	113		

a. 3 cells (37,5%) have expected count less than 5. The minimum expected count is 2,48.

Table 9-37: Nominal Directional Measures for Sending Comment via E-mail in Countries

Directional Measures						
			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	,000	,000	, ^c	, ^c
		Sending Comment via e-mail - Usage Dependent	,000	,000	, ^c	, ^c
		Country Dependent	,000	,000	, ^c	, ^c
	Goodman and Kruskal tau	Sending Comment via e-mail - Usage Dependent	,053	,041		,113 ^d
		Country Dependent	,021	,017		,066 ^d
	Uncertainty Coefficient	Symmetric	,032	,024	1,297	,103 ^e
		Sending Comment via e-mail - Usage Dependent	,073	,054	1,297	,103 ^e
		Country Dependent	,020	,016	1,297	,103 ^e

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Cannot be computed because the asymptotic standard error equals zero.
d. Based on chi-square approximation
e. Likelihood ratio chi-square probability.

Table 9-38: Symmetric Measures for Usage of for Sending Comment via E-mail

Symmetric Measures			
		Value	Approx. Sig.
Nominal by	Phi	,231	,110
Nominal	Cramer's V	,231	,110
	Contingency Coefficient	,225	,110
N of Valid Cases		113	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Appendix C: Results of Satisfaction Level of Features

Table 9-39: Descriptive Statistics for Satisfaction Level of Features for Countries

Descriptives									
		N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
.mht Reporting - If Yes, Satisfaction	TR	20	4,00	1,076	,241	3,50	4,50	1	5
	BE	15	3,00	1,134	,293	2,37	3,63	1	4
	FI	11	3,09	1,136	,343	2,33	3,85	1	5
	PO	21	3,95	,990	,129	3,68	4,22	3	5
	Total	67	3,61	1,058	,129	3,35	3,87	1	5
Printable View - If Yes, Satisfaction	TR	43	3,79	1,059	,162	3,46	4,12	1	5
	BE	20	3,35	1,182	,264	2,80	3,90	1	5
	FI	21	3,10	,944	,206	2,67	3,52	2	5
	PO	27	2,85	1,262	,243	2,35	3,35	1	5
	Total	111	3,35	1,165	,111	3,13	3,57	1	5
Executive Summary - If Yes, Satisfaction	TR	34	4,00	,696	,119	3,76	4,24	3	5
	BE	15	2,73	1,100	,284	2,12	3,34	1	5
	FI	11	3,09	,701	,211	2,62	3,56	2	4
	PO	24	3,67	,565	,115	3,43	3,91	3	5
	Total	84	3,56	,883	,096	3,37	3,75	1	5
Excel Uploader in Financial Dev. Section - If Yes, Satisfaction	TR	20	3,80	1,005	,225	3,33	4,27	2	5
	BE	7	3,43	,976	,369	2,53	4,33	2	5
	FI	8	2,63	,916	,324	1,86	3,39	1	4
	PO	9	3,33	,500	,167	2,95	3,72	3	4
	Total	44	3,43	,974	,147	3,14	3,73	1	5
Help Documents - If Yes, Satisfaction	TR	26	3,92	,935	,183	3,55	4,30	2	5
	BE	8	2,75	,886	,313	2,01	3,49	1	4
	FI	6	3,00	1,265	,516	1,67	4,33	1	4
	PO	23	3,30	1,020	,213	2,86	3,75	1	5
	Total	63	3,46	1,060	,134	3,19	3,73	1	5
Consolidation - If Yes, Satisfaction	TR	33	3,91	1,128	,196	3,51	4,31	1	5
	BE	14	3,43	,756	,202	2,99	3,87	2	4
	FI	12	3,00	1,044	,302	2,34	3,66	2	5
	PO	15	3,73	,799	,206	3,29	4,18	2	5
	Total	74	3,64	1,028	,120	3,40	3,87	1	5
Template Selection Regarding Consolidation - If Yes, Satisfaction	TR	20	4,20	,951	,213	3,75	4,65	2	5
	BE	11	3,18	,751	,226	2,68	3,69	2	4
	FI	8	2,75	1,165	,412	1,78	3,72	1	4
	PO	15	3,53	,915	,236	3,03	4,04	1	5
	Total	54	3,59	1,055	,144	3,30	3,88	1	5
Comment - If Yes, Satisfaction	TR	30	4,17	,648	,118	3,92	4,41	3	5
	BE	12	3,17	,937	,271	2,57	3,76	1	4
	FI	16	3,50	,894	,224	3,02	3,98	1	4
	PO	22	3,64	,658	,140	3,34	3,93	3	5
	Total	80	3,74	,823	,092	3,55	3,92	1	5
Sending Comment via e-mail - If Yes, Satisfaction	TR	9	4,22	,667	,222	3,71	4,73	3	5
	BE	1	4,00	,	,	,	,	4	4
	FI	3	2,67	1,528	,882	-1,13	6,46	1	4
	PO	5	3,00	,000	,000	3,00	3,00	3	3
	Total	18	3,61	,979	,231	3,12	4,10	1	5

Table 9-40: Test of Homogeneity of Variances for All Features

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
.mht Reporting - If Yes, Satisfaction	2,678	3	63	,055
Printable View - If Yes, Satisfaction	1,253	3	107	,294
Executive Summary - If Yes, Satisfaction	2,496	3	80	,066
Excel Uploader in Financial Dev. Section - If Yes, Satisfaction	1,544	3	40	,218
Help Documents - If Yes, Satisfaction	,662	3	59	,579
Consolidation - If Yes, Satisfaction	,788	3	70	,504
Template Selection Regarding Consolidation - If Yes, Satisfaction	,920	3	50	,438
Comment - If Yes, Satisfaction	,910	3	76	,440
Sending Comment via e-mail - If Yes, Satisfaction	5,710	3	14	,009

Table 9-41: Results of One-way ANOVA for All Features

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
.mht Reporting - If Yes, Satisfaction	Between Groups	14,049	3	4,683	4,929	,004
	Within Groups	59,861	63	,950		
	Total	73,910	66			
Printable View - If Yes, Satisfaction	Between Groups	16,414	3	5,471	4,406	,006
	Within Groups	132,883	107	1,242		
	Total	149,297	110			
Executive Summary - If Yes, Satisfaction	Between Groups	19,527	3	6,509	11,526	,000
	Within Groups	45,176	80	,565		
	Total	64,702	83			
Excel Uploader in Financial Dev. Section - If Yes, Satisfaction	Between Groups	8,006	3	2,669	3,256	,031
	Within Groups	32,789	40	,820		
	Total	40,795	43			
Help Documents - If Yes, Satisfaction	Between Groups	11,435	3	3,812	3,863	,014
	Within Groups	58,216	59	,987		
	Total	69,651	62			
Consolidation - If Yes, Satisfaction	Between Groups	8,059	3	2,686	2,722	,051
	Within Groups	69,089	70	,987		
	Total	77,149	73			
Template Selection Regarding Consolidation - If Yes, Satisfaction	Between Groups	14,967	3	4,989	5,660	,002
	Within Groups	44,070	50	,881		
	Total	59,037	53			
Comment - If Yes, Satisfaction	Between Groups	10,563	3	3,521	6,234	,001
	Within Groups	42,924	76	,565		
	Total	53,488	79			
Sending Comment via e-mail - If Yes, Satisfaction	Between Groups	8,056	3	2,685	4,572	,020
	Within Groups	8,222	14	,587		
	Total	16,278	17			

Table 9-42: Post-Hoc Analysis Results for Satisfaction Level of Tool Features

Multiple Comparisons							
Tukey HSD							
Dependent Variable	(I) Country	(J) Country	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
.mht Reporting - If Yes, Satisfaction	TR	BE	1,00*	,333	,020	,12	1,88
		FI	,91	,366	,072	-,06	1,87
		PO	,05	,305	,999	-,76	,85
	BE	TR	-1,00*	,333	,020	-1,88	-,12
		FI	-,09	,387	,995	-1,11	,93
		PO	-,95*	,330	,026	-1,82	-,08
	FI	TR	-,91	,366	,072	-1,87	,06
		BE	,09	,387	,995	-,93	1,11
		PO	-,86	,363	,093	-1,82	,10
	PO	TR	-,05	,305	,999	-,85	,76
		BE	,95*	,330	,026	,08	1,82
		FI	,86	,363	,093	-,10	1,82
Printable View - If Yes, Satisfaction	TR	BE	,44	,302	,465	-,35	1,23
		FI	,70	,297	,095	-,08	1,47
		PO	,94*	,274	,005	,22	1,65
	BE	TR	-,44	,302	,465	-1,23	,35
		FI	,25	,348	,884	-,65	1,16
		PO	,50	,329	,432	-,36	1,36
	FI	TR	-,70	,297	,095	-1,47	,08
		BE	-,25	,348	,884	-1,16	,65
		PO	,24	,324	,876	-,60	1,09
	PO	TR	-,94*	,274	,005	-1,65	-,22
		BE	-,50	,329	,432	-1,36	,36
		FI	-,24	,324	,876	-1,09	,60
Executive Summary - If Yes, Satisfaction	TR	BE	1,27*	,233	,000	,66	1,88
		FI	,91*	,261	,004	,23	1,59
		PO	,33	,200	,350	-,19	,86
	BE	TR	-1,27*	,233	,000	-1,88	-,66
		FI	-,36	,298	,629	-1,14	,43
		PO	-,93*	,247	,002	-1,58	-,28
	FI	TR	-,91*	,261	,004	-1,59	-,23
		BE	,36	,298	,629	-,43	1,14
		PO	-,58	,274	,161	-1,29	,14
	PO	TR	-,33	,200	,350	-,86	,19
		BE	,93*	,247	,002	,28	1,58
		FI	,58	,274	,161	-,14	1,29
Excel Uploader in Financial Dev. Section - If Yes, Satisfaction	TR	BE	,37	,398	,787	-,69	1,44
		FI	1,17*	,379	,018	,16	2,19
		PO	,47	,363	,578	-,51	1,44
	BE	TR	-,37	,398	,787	-1,44	,69
		FI	,80	,469	,330	-,45	2,06
		PO	,10	,456	,997	-1,13	1,32
	FI	TR	-1,17*	,379	,018	-2,19	-,16
		BE	-,80	,469	,330	-2,06	,45
		PO	-,71	,440	,385	-1,89	,47
	PO	TR	-,47	,363	,578	-1,44	,51
		BE	-,10	,456	,997	-1,32	1,13
		FI	,71	,440	,385	-,47	1,89

Help Documents - If Yes, Satisfaction	TR	RF	1,17*	,402	,025	,11	2,23
		FI	,92	,450	,181	-,27	2,11
		PO	,62	,284	,142	-,13	1,37
	BE	TR	-1,17*	,402	,025	-2,23	-,11
		FI	-,25	,536	,966	-1,67	1,17
		PO	-,55	,408	,529	-1,63	,52
	FI	TR	-,92	,450	,181	-2,11	,27
		BE	,25	,536	,966	-1,17	1,67
		PO	-,30	,455	,909	-1,51	,90
	PO	TR	-,62	,284	,142	-1,37	,13
		BE	,55	,408	,529	-,52	1,63
		FI	,30	,455	,909	-,90	1,51
Template Selection Regarding Consolidation - If Yes, Satisfaction	TR	BE	1,02*	,352	,028	,08	1,95
		FI	1,45*	,393	,003	,41	2,49
		PO	,67	,321	,174	-,19	1,52
	BE	TR	-1,02*	,352	,028	-1,95	-,08
		FI	,43	,436	,756	-,73	1,59
		PO	-,35	,373	,782	-1,34	,64
	FI	TR	-1,45*	,393	,003	-2,49	-,41
		BE	-,43	,436	,756	-1,59	,73
		PO	-,78	,411	,239	-1,88	,31
	PO	TR	-,67	,321	,174	-1,52	,19
		BE	,35	,373	,782	-,64	1,34
		FI	,78	,411	,239	-,31	1,88
Comment - If Yes, Satisfaction	TR	BE	1,00*	,257	,001	,33	1,67
		FI	,67*	,233	,027	,06	1,28
		PO	,53	,211	,066	-,02	1,08
	BE	TR	-1,00*	,257	,001	-1,67	-,33
		FI	-,33	,287	,653	-1,09	,42
		PO	-,47	,270	,310	-1,18	,24
	FI	TR	-,67*	,233	,027	-1,28	-,06
		BE	,33	,287	,653	-,42	1,09
		PO	-,14	,247	,946	-,78	,51
	PO	TR	-,53	,211	,066	-1,08	,02
		BE	,47	,270	,310	-,24	1,18
		FI	,14	,247	,946	-,51	,78

*. The mean difference is significant at the .05 level.

Table 9-43: Post-Hoc Analysis Results for Satisfaction Level of Consolidation at Significance Level of 0.1

Multiple Comparisons						
Dependent Variable: Consolidation - If Yes, Satisfaction						
Tukey HSD						
(I) Country	(J) Country	Mean Difference (I-J)	Std. Error	Sig.	90% Confidence Interval	
					Lower Bound	Upper Bound
Turkey	Belgium	,48	,317	,433	-,26	1,22
	Finland	,91*	,335	,041	,13	1,69
	Poland	,18	,309	,941	-,55	,90
Belgium	Turkey	-,48	,317	,433	-1,22	,26
	Finland	,43	,391	,693	-,48	1,34
	Poland	-,30	,369	,842	-1,17	,56
Finland	Turkey	-,91*	,335	,041	-1,69	-,13
	Belgium	-,43	,391	,693	-1,34	,48
	Poland	-,73	,385	,235	-1,63	,16
Poland	Turkey	-,18	,309	,941	-,90	,55
	Belgium	,30	,369	,842	-,56	1,17
	Finland	,73	,385	,235	-,16	1,63

*. The mean difference is significant at the .1 level.

Appendix D: Results of Satisfaction Level of Attributes

Table 9-44: Descriptive Statistics for Perception of Attributes for Countries

Descriptives									
		N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Acceptance	TR	54	3,78	,945	,129	3,52	4,04	1	5
	BE	22	2,82	1,220	,260	2,28	3,36	1	4
	FI	25	2,88	,927	,185	2,50	3,26	1	4
	PO	36	3,75	,554	,092	3,56	3,94	2	4
	Total	137	3,45	1,000	,085	3,28	3,62	1	5
Necessity	TR	54	3,94	,834	,113	3,72	4,17	2	5
	BE	22	2,73	1,077	,230	2,25	3,20	1	4
	FI	26	3,04	1,280	,251	2,52	3,56	1	5
	PO	36	3,61	,871	,145	3,32	3,91	1	5
	Total	138	3,49	1,076	,092	3,31	3,67	1	5
Accessibility	TR	53	3,96	,898	,123	3,71	4,21	2	5
	BE	22	2,73	1,202	,256	2,19	3,26	1	4
	FI	26	3,04	,916	,180	2,67	3,41	1	4
	PO	35	3,60	,812	,137	3,32	3,88	1	5
	Total	136	3,49	1,040	,089	3,32	3,67	1	5
Performance	TR	52	3,75	,789	,109	3,53	3,97	1	5
	BE	20	2,50	1,147	,256	1,96	3,04	1	5
	FI	26	2,27	1,116	,219	1,82	2,72	1	4
	PO	34	3,41	,821	,141	3,13	3,70	1	5
	Total	132	3,18	1,104	,096	2,99	3,37	1	5
Business Alignment	TR	53	3,55	,992	,136	3,27	3,82	1	5
	BE	22	2,50	1,102	,235	2,01	2,99	1	5
	FI	26	2,92	1,055	,207	2,50	3,35	1	5
	PO	35	3,46	,919	,155	3,14	3,77	1	5
	Total	136	3,24	1,070	,092	3,05	3,42	1	5
Accuracy	TR	54	3,78	,904	,123	3,53	4,02	2	5
	BE	22	3,00	1,024	,218	2,55	3,45	1	4
	FI	26	3,15	1,008	,198	2,75	3,56	1	5
	PO	34	3,68	,638	,109	3,45	3,90	2	5
	Total	136	3,51	,935	,080	3,35	3,67	1	5
Effectiveness	TR	54	3,59	1,019	,139	3,31	3,87	1	5
	BE	22	2,36	1,177	,251	1,84	2,89	1	4
	FI	26	2,50	1,068	,209	2,07	2,93	1	4
	PO	35	3,34	,906	,153	3,03	3,65	1	5
	Total	137	3,12	1,140	,097	2,93	3,32	1	5
User Friendliness	TR	54	3,54	1,145	,156	3,22	3,85	1	5
	BE	22	2,45	1,299	,277	1,88	3,03	1	5
	FI	26	2,77	1,210	,237	2,28	3,26	1	5
	PO	35	3,49	,818	,138	3,20	3,77	2	5
	Total	137	3,20	1,183	,101	3,00	3,40	1	5
Reporting	TR	52	3,79	,997	,138	3,51	4,07	1	5
	BE	22	2,73	1,352	,288	2,13	3,33	1	5
	FI	25	3,08	,862	,172	2,72	3,44	1	4
	PO	35	3,63	,770	,130	3,36	3,89	2	5
	Total	134	3,44	1,059	,091	3,26	3,62	1	5

Table 9-45: Test of Homogeneity of Variances for All Features

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
Acceptance	6,352	3	133	,000
Necessity	4,262	3	134	,007
Accessibility	3,082	3	132	,030
Performance	4,070	3	128	,008
Business Alignment	,408	3	132	,747
Accuracy	1,825	3	132	,146
Effectiveness	1,861	3	133	,139
User Friendliness	2,761	3	133	,045
Reporting	5,184	3	130	,002

Table 9-46: Results of One-way ANOVA for All Attributes

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Acceptance	Between Groups	25,946	3	8,649	10,457	,000
	Within Groups	109,996	133	,827		
	Total	135,942	136			
Necessity	Between Groups	29,779	3	9,926	10,334	,000
	Within Groups	128,714	134	,961		
	Total	158,493	137			
Accessibility	Between Groups	30,343	3	10,114	11,544	,000
	Within Groups	115,650	132	,876		
	Total	145,993	135			
Performance	Between Groups	49,536	3	16,512	19,196	,000
	Within Groups	110,101	128	,860		
	Total	159,636	131			
Business Alignment	Between Groups	21,307	3	7,102	7,040	,000
	Within Groups	133,164	132	1,009		
	Total	154,471	135			
Accuracy	Between Groups	13,834	3	4,611	5,844	,001
	Within Groups	104,159	132	,789		
	Total	117,993	135			
Effectiveness	Between Groups	36,377	3	12,126	11,477	,000
	Within Groups	140,514	133	1,056		
	Total	176,891	136			
User Friendliness	Between Groups	26,039	3	8,680	7,029	,000
	Within Groups	164,239	133	1,235		
	Total	190,277	136			
Reporting	Between Groups	21,974	3	7,325	7,495	,000
	Within Groups	127,048	130	,977		
	Total	149,022	133			

Table 9-47: Post-Hoc Analysis Results for Satisfaction Level of Attributes

Multiple Comparisons							
Tamhane							
Dependent Variable	(I) Country	(J) Country	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Acceptance	TR	BE	,96*	,290	,014	,15	1,77
		FI	,90*	,226	,001	,28	1,52
		PO	,03	,158	1,000	-,40	,45
	BE	TR	-,96*	,290	,014	-1,77	-,15
		FI	-,06	,320	1,000	-,95	,82
		PO	-,93*	,276	,014	-1,72	-,15
	FI	TR	-,90*	,226	,001	-1,52	-,28
		BE	,06	,320	1,000	-,82	,95
		PO	-,87*	,207	,001	-1,45	-,29
	PO	TR	-,03	,158	1,000	-,45	,40
		BE	,93*	,276	,014	,15	1,72
		FI	,87*	,207	,001	,29	1,45
Necessity	TR	BE	1,22*	,256	,000	,50	1,94
		FI	,91*	,275	,014	,14	1,67
		PO	,33	,184	,372	-,16	,83
	BE	TR	-1,22*	,256	,000	-1,94	-,50
		FI	-,31	,340	,935	-1,25	,62
		PO	-,88*	,272	,014	-1,64	-,13
	FI	TR	-,91*	,275	,014	-1,67	-,14
		BE	,31	,340	,935	-,62	1,25
		PO	-,57	,290	,288	-1,37	,23
	PO	TR	-,33	,184	,372	-,83	,16
		BE	,88*	,272	,014	,13	1,64
		FI	,57	,290	,288	-,23	1,37
Accessibility	TR	BE	1,23*	,284	,001	,44	2,03
		FI	,92*	,218	,001	,33	1,52
		PO	,36	,184	,279	-,14	,86
	BE	TR	-1,23*	,284	,001	-2,03	-,44
		FI	-,31	,313	,906	-1,10	,56
		PO	-,87*	,291	,030	-1,69	-,06
	FI	TR	-,92*	,218	,001	-1,52	-,33
		BE	,31	,313	,906	-,56	1,18
		PO	-,56	,226	,094	-1,18	,06
	PO	TR	-,36	,184	,279	-,86	,14
		BE	,87*	,291	,030	,06	1,69
		FI	,56	,226	,094	-,06	1,18
Performance	TR	BE	1,25*	,279	,001	,46	2,04
		FI	1,48*	,245	,000	,80	2,16
		PO	,34	,178	,319	-,14	,82
	BE	TR	-1,25*	,279	,001	-2,04	-,46
		FI	,23	,337	,984	-,70	1,16
		PO	-,91*	,293	,024	-1,73	-,09
	FI	TR	-1,48*	,245	,000	-2,16	-,80
		BE	-,23	,337	,984	-1,16	,70
		PO	-1,14*	,260	,000	-1,86	-,43
	PO	TR	,34	,178	,319	,82	,14
		BE	,91*	,293	,024	,09	1,73
		FI	1,14*	,260	,000	,43	1,86

User Friendliness	TR	BE	1,08*	,281	,001	,35	1,81
		FI	,77*	,265	,023	,08	1,46
		PO	,05	,241	,997	-,58	,68
	BE	TR	-1,08*	,281	,001	-1,81	-,35
		FI	-,31	,322	,762	-1,15	,52
		PO	-1,03*	,302	,005	-1,82	-,24
	FI	TR	-,77*	,265	,023	-1,46	-,08
		BE	,31	,322	,762	-,52	1,15
		PO	-,72	,288	,066	-1,47	,03
	PO	TR	-,05	,241	,997	-,68	,58
		BE	1,03*	,302	,005	,24	1,82
		FI	,72	,288	,066	-,03	1,47
Reporting	TR	BE	1,06*	,251	,000	,41	1,72
		FI	,71*	,241	,020	,08	1,33
		PO	,16	,216	,881	-,40	,72
	BE	TR	-1,06*	,251	,000	-1,72	-,41
		FI	-,35	,289	,615	-1,10	,40
		PO	-,90*	,269	,006	-1,60	-,20
	FI	TR	-,71*	,241	,020	-1,33	-,08
		BE	,35	,289	,615	-,40	1,10
		PO	-,55	,259	,152	-1,22	,13
	PO	TR	-,16	,216	,881	-,72	,40
		BE	,90*	,269	,006	,20	1,60
		FI	,55	,259	,152	-,13	1,22
^: The mean difference is significant at the .05 level.							

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Country	(J) Country	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Business Alignment	TR	BE	1,05*	,255	,000	,38	1,71
		FI	,62	,240	,051	,00	1,25
		PO	,09	,219	,976	-,48	,66
	BE	TR	-1,05*	,255	,000	-1,71	-,38
		FI	-,42	,291	,468	-1,18	,33
		PO	-,96*	,273	,003	-1,67	-,25
	FI	TR	-,62	,240	,051	-1,25	,00
		BE	,42	,291	,468	-,33	1,18
		PO	-,53	,260	,174	-1,21	,14
PO	TR	-,09	,219	,976	-,66	,48	
	BE	,96*	,273	,003	,25	1,67	
	FI	,53	,260	,174	-,14	1,21	
Accuracy	TR	BE	,78*	,225	,004	,19	1,36
		FI	,62*	,212	,020	,07	1,18
		PO	,10	,194	,954	-,40	,61
	BE	TR	-,78*	,225	,004	-1,36	-,19
		FI	-,15	,257	,933	-,82	,52
		PO	-,68*	,243	,031	-1,31	-,04
	FI	TR	-,62*	,212	,020	-1,18	-,07
		BE	,15	,257	,933	-,52	,82
		PO	-,52	,231	,113	-1,12	,08
PO	TR	-,10	,194	,954	-,61	,40	
	BE	,68*	,243	,031	,04	1,31	
	FI	,52	,231	,113	-,08	1,12	
Effectiveness	TR	BE	1,23*	,260	,000	,55	1,91
		FI	1,09*	,245	,000	,45	1,73
		PO	,25	,223	,678	-,33	,83
	BE	TR	-1,23*	,260	,000	-1,91	-,55
		FI	-,14	,298	,968	-,91	,64
		PO	-,98*	,280	,003	-1,71	-,25
	FI	TR	-1,09*	,245	,000	-1,73	-,45
		BE	,14	,298	,968	-,64	,91
		PO	-,84*	,266	,010	-1,54	-,15
PO	TR	-,25	,223	,678	-,83	,33	
	BE	,98*	,280	,003	,25	1,71	
	FI	,84*	,266	,010	,15	1,54	

*. The mean difference is significant at the .05 level.

Appendix E: Results of General Satisfaction

Table 9-48: Descriptive Statistics for General Satisfaction for Countries

Descriptives								
Considering the process, content and tool satisfaction								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Turkey	54	3,81	,848	,115	3,58	4,05	2	5
Belgium	21	2,71	1,146	,250	2,19	3,24	1	4
Finland	25	2,84	1,068	,214	2,40	3,28	1	5
Poland	33	3,85	,619	,108	3,63	4,07	2	5
Total	133	3,47	1,019	,088	3,29	3,64	1	5

Table 9-49: Test of Homogeneity of Variances for General Satisfaction

Test of Homogeneity of Variances			
Considering the process, content and tool satisfaction			
Levene Statistic	df1	df2	Sig.
6,159	3	129	,001

Table 9-50: Results of One-way ANOVA for General Satisfaction

ANOVA					
Considering the process, content and tool satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	33,061	3	11,020	13,665	,000
Within Groups	104,036	129	,806		
Total	137,098	132			

Table 9-51: Post-Hoc Analysis Results for General Satisfaction

Multiple Comparisons						
Dependent Variable: Considering the process, content and tool satisfaction						
Tamhane						
(I) Country	(J) Country	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Turkey	Belgium	1.10*	.276	.002	.32	1.88
	Finland	.97*	.243	.002	.30	1.65
	Poland	-.03	.158	1.000	-.46	.39
Belgium	Turkey	-1.10*	.276	.002	-1.88	-.32
	Finland	-.13	.329	.999	-1.03	.78
	Poland	-1.13*	.272	.002	-1.91	-.36
Finland	Turkey	-.97*	.243	.002	-1.65	-.30
	Belgium	.13	.329	.999	-.78	1.03
	Poland	-1.01*	.239	.001	-1.67	-.34
Poland	Turkey	.03	.158	1.000	-.39	.46
	Belgium	1.13*	.272	.002	.36	1.91
	Finland	1.01*	.239	.001	.34	1.67

*. The mean difference is significant at the .05 level.

Appendix F: Results of General Satisfaction by Profiles

Table 9-52: Group Statistics for User Position

Group Statistics					
	Transformed Positions2	N	Mean	Std. Deviation	Std. Error Mean
Considering the process, content and tool satisfaction	Strategy Planner	52	3.37	1.121	.155
	Strategy Maker	80	3.53	.954	.107

Table 9-53: Results of Independent T Test for User Position

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Considering the process, content and tool satisfaction	Equal variances assumed	3.270	.073	-.876	130	.383	-.16	.182	-.520	.201	
	Equal variances not assumed			-.847	96.557	.399	-.16	.189	-.534	.215	

Table 9-54: Group Statistics for Business Type

Group Statistics					
	Transformed Department 1	N	Mean	Std. Deviation	Std. Error Mean
Considering the process, content and tool satisfaction	Product Bus.	78	3.45	1.015	.115
	Project Bus.	54	3.48	1.041	.142

Table 9-55: Results of Independent T Test for Business Type

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Considering the process, content and tool satisfaction	Equal variances assumed	.025	.875	-.180	130	.857	-.03	.182	-.392	.326	
	Equal variances not assumed			-.180	112.208	.858	-.03	.182	-.394	.329	

Table 9-56: Group Statistics for User Types

Group Statistics					
	Transformed User Type	N	Mean	Std. Deviation	Std. Error Mean
Considering the process, content and tool satisfaction	Normal User	105	3.29	1.016	.099
	Admins	27	4.15	.718	.138

Table 9-57: Results of Independent T Test for Business Type

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Considering the process, content and tool satisfaction	Equal variances assumed	5.488	.021	-4.146	130	.000	-.86	.208	-1.274	-.451	
	Equal variances not assumed			-5.070	55.971	.000	-.86	.170	-1.203	-.522	

Appendix G: Results of Regression Analysis of General Satisfaction

Table 9-58: Descriptive Statistics for Used Criteria in Regression Analysis

Descriptive Statistics			
	Mean	Std. Deviation	N
Considering the process, content and tool satisfaction	3.59	1.033	91
Acceptance	3.51	1.015	91
Necessity	3.58	1.096	91
Accessibility	3.59	1.043	91
Performance	3.33	1.055	91
Business Alignment	3.33	1.106	91
Accuracy	3.57	.944	91
Effectiveness	3.24	1.129	91
User Friendliness	3.41	1.164	91
Reporting	3.47	1.129	91
Please rate the quality of local strategic planning department support:			
Please rate the response speed of local strategic planning department support	4.00	.989	91
trainings	3.38	1.052	91
deadline	3.16	.992	91
Belgium	.1429	.35187	91
Finland	.1319	.34022	91
Poland	.2747	.44885	91

Table 9-59: Variables Entered and Removed in Regression Analysis

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Effectiveness		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Acceptance		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	Please rate the response speed of local strategic planning department support		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	Poland		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
5	Necessity		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
6	User Friendliness		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

^a. Dependent Variable: Considering the process, content and tool satisfaction

Table 9-60: Summary of Regression Analysis

Model Summary ^g										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson	
					R Square Change	F Change	df1	df2		Sig. F Change
6	.907 ^f	.822	.809	.451	.013	6.214	1	84	.015	2.009

f. Predictors: (Constant), Effectiveness, Acceptance, Please rate the response speed of local strategic planning department support, Poland, Necessity, User Friendliness

g. Dependent Variable: Considering the process, content and tool satisfaction

Table 9-61: Results of Anova Regression Analysis

ANOVA ^g						
Model		Sum of Squares	df	Mean Square	F	Sig.
6	Regression	78.889	6	13.148	64.713	.000 ^f
	Residual	17.067	84	.203		
	Total	95.956	90			

f. Predictors: (Constant), Effectiveness, Acceptance, Please rate the response speed of local strategic planning department support, Poland, Necessity, User Friendliness

g. Dependent Variable: Considering the process, content and tool satisfaction

Table 9-62: Summary of Excluded Variables in Regression Analysis

Excluded Variables ^g								
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
6	Accessibility	.005 ^f	.076	.940	.008	.429	2.331	.205
	Performance	-.009 ^f	-.132	.895	-.014	.439	2.280	.204
	Business Alignment	-.029 ^f	-.298	.766	-.033	.229	4.360	.211
	Accuracy	.118 ^f	1.573	.120	.170	.370	2.701	.184
	Reporting	.024 ^f	.280	.780	.031	.294	3.400	.187
	Please rate the quality of local strategic planning department support:	.024 ^f	.236	.814	.026	.214	4.665	.214
	trainings	.063 ^f	.975	.332	.106	.511	1.957	.206
	deadline	.112 ^f	1.853	.067	.199	.562	1.780	.214
	Belgium	-.063 ^f	-1.197	.235	-.130	.772	1.295	.215
	Finland	.052 ^f	.976	.332	.106	.735	1.360	.211

f. Predictors in the Model: (Constant), Effectiveness, Acceptance, Please rate the response speed of local strategic planning department support, Poland, Necessity, User Friendliness

g. Dependent Variable: Considering the process, content and tool satisfaction

Table 9-63: Result of Collinearity Diagnostics of Regression Analysis

Collinearity Diagnostics ^a										
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	Effectiveness	Acceptance	Please rate the response speed of local strategic planning department support	Poland	Necessity	User Friendliness
6	1	6.114	1.000	.00	.00	.00	.00	.01	.00	.00
	2	.682	2.993	.00	.00	.00	.00	.94	.00	.00
	3	8.840E-02	8.316	.10	.06	.02	.16	.00	.03	.02
	4	5.782E-02	10.283	.02	.00	.01	.01	.00	.22	.43
	5	2.165E-02	16.803	.43	.02	.30	.49	.04	.27	.00
	6	2.155E-02	16.842	.19	.07	.32	.31	.00	.30	.36
	7	1.437E-02	20.627	.25	.86	.36	.02	.00	.18	.19

a. Dependent Variable: Considering the process, content and tool satisfaction

Appendix H: Results of Regression Analysis of Acceptance

Table 9-64: Descriptive Statistics for Used Criteria in Regression Analysis

Descriptive Statistics			
	Mean	Std. Deviation	N
Acceptance	3.51	1.007	93
Necessity	3.56	1.098	93
Accessibility	3.59	1.035	93
Performance	3.34	1.048	93
Business Alignment	3.32	1.095	93
Accuracy	3.58	.936	93
Effectiveness	3.24	1.117	93
User Friendliness	3.41	1.172	93
Reporting	3.48	1.119	93
Please rate the quality of local strategic planning department support:	4.01	.984	93
Please rate the response speed of local strategic planning department support trainings	4.03	.890	93
deadline	3.39	1.043	93
Belgium	3.17	.985	93
Finland	.1398	.34864	93
Poland	.1290	.33705	93
	.2903	.45637	93

Table 9-65: Variables Entered and Removed in Regression Analysis

Variables Entered/Removed ^d			
Model	Variables Entered	Variables Removed	Method
1	Effectiveness	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Business Alignment	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	Performance	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Acceptance

Table 9-66: Summary of Regression Analysis

Model Summary ^d										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.801 ^a	.642	.638	.606	.642	163.002	1	91	.000	
2	.845 ^b	.713	.707	.545	.072	22.517	1	90	.000	
3	.854 ^c	.730	.721	.532	.016	5.425	1	89	.022	2.188

a. Predictors: (Constant), Effectiveness
 b. Predictors: (Constant), Effectiveness, Business Alignment
 c. Predictors: (Constant), Effectiveness, Business Alignment, Performance
 d. Dependent Variable: Acceptance

Table 9-67: Results of Anova Regression Analysis

ANOVA ^d						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.840	1	59.840	163.002	.000 ^a
	Residual	33.407	91	.367		
	Total	93.247	92			
2	Regression	66.526	2	33.263	112.031	.000 ^b
	Residual	26.722	90	.297		
	Total	93.247	92			
3	Regression	68.061	3	22.687	80.168	.000 ^c
	Residual	25.186	89	.283		
	Total	93.247	92			

a. Predictors: (Constant), Effectiveness
 b. Predictors: (Constant), Effectiveness, Business Alignment
 c. Predictors: (Constant), Effectiveness, Business Alignment, Performance
 d. Dependent Variable: Acceptance

Table 9-68: Summary of Excluded Variables in Regression Analysis

Excluded Variables ^d								
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
3	Necessity	.055 ^c	.617	.539	.066	.385	2.598	.286
	Accessibility	.027 ^c	.309	.758	.033	.401	2.492	.294
	Accuracy	.041 ^c	.525	.601	.056	.503	1.989	.301
	User Friendliness	.024 ^c	.300	.765	.032	.490	2.039	.260
	Reporting	.137 ^c	1.440	.153	.152	.333	3.005	.241
	Please rate the quality of local strategic planning department support:							
	Please rate the response speed of local strategic planning department support	.032 ^c	.496	.621	.053	.712	1.404	.311
	trainings	-.062 ^c	-1.038	.302	-.110	.838	1.193	.309
	deadline	.080 ^c	1.208	.230	.128	.688	1.454	.271
	Belgium	.085 ^c	1.257	.212	.133	.666	1.501	.307
	Finland	-.021 ^c	-.355	.723	-.038	.851	1.175	.303
	Poland	-.080 ^c	-1.326	.188	-.140	.829	1.206	.309
			.079 ^c	1.433	.155	.151	.983	1.017

a. Predictors in the Model: (Constant), Effectiveness

b. Predictors in the Model: (Constant), Effectiveness, Business Alignment

c. Predictors in the Model: (Constant), Effectiveness, Business Alignment, Performance

d. Dependent Variable: Acceptance

Table 9-69: Result of Collinearity Diagnostics of Regression Analysis

Collinearity Diagnostics ^a							
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Effectiveness	Business Alignment	Performance
1	1	1.946	1.000	.03	.03		
	2	5.417E-02	5.993	.97	.97		
2	1	2.917	1.000	.01	.00	.00	
	2	6.226E-02	6.844	.98	.13	.08	
	3	2.117E-02	11.736	.01	.87	.92	
3	1	3.882	1.000	.00	.00	.00	.00
	2	6.238E-02	7.889	.85	.10	.06	.00
	3	3.531E-02	10.486	.09	.02	.24	.88
	4	2.017E-02	13.874	.05	.88	.69	.11

a. Dependent Variable: Acceptance

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